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October 17, 2011
Project No. 0647-01-36-42-02

Ms. Christine M. Bergren
MC-124
Section Manager
Municipal Solid Waste Permits Section
Texas Commission on Environmental Quality
12100 Park 35 Circle, Bldg. F
Austin, Texas 78753

Re: Response to Permit Modification NOD
Passive Vent Installation
Castle Drive Landfill - MSW Permit No. 1062A
Dallas County, Texas
Tracking No. 14834289; RN100221225 / CN600328694

Dear Ms. Bergren:

On behalf of City of Garland (City), Weaver Boos Consultants, LLC-Southwest (WBC), is submitting this response to the Texas Commission on Environmental Quality (TCEQ) September 19, 2011 Notice of Deficiency (NOD) for the permit modification submitted on July 25, 2011. The NOD requested additional information to demonstrate compliance with Title 30 of the Texas Administrative Code (30 TAC) Section §305.70.

The following cites TCEQ's NOD comments, followed by a written response providing the additional requested information.

Comments:

1. Section 5.0, Contingency Plan

- a. Please provide a discussion on the criteria used in determining when the remediation effort will be considered successful. It is recommended that at least six months of monthly monitoring be performed with consecutive gas readings below the regulatory limit prior to reinstating quarterly monitoring.

Response:

As requested, Section 5.0-Contingency Plan has been revised by adding Section 5.5-Remediation Plan Status/Monitoring which provides the evaluation criteria for remediation efforts.

- b. Please provide information regarding the submittal of status reports which includes summaries of remedial actions completed and all related gas monitoring results.**

Response:

As requested, Section 5.0-Contingency Plan has been revised by adding Section 5.5-Remediation Plan Status/Monitoring which provides information on the submittal of status reports and monitoring results.

- c. Please indicate in Section 5.0 that notification will be provided to the Texas Commission on Environmental Quality (TCEQ) upon the return of remediated probes to quarterly monitoring.**

Response:

As requested, Section 5.0-Contingency Plan has been revised has been revised by adding Section 5.5-Remediation Plan Status/Monitoring which notes that notification will be provided to TCEQ upon return to quarterly monitoring.

- d. Please indicate that if methane levels in probes that are currently being remediated are not within the regulatory limits at the end of this six month period, the City must contact the TCEQ to discuss additional remediation measures.**

Response:

As requested, Section 5.0-Contingency Plan has been revised by adding Section 5.5-Remediation Plan Status/Monitoring which includes that following a six month evaluation period the City will contact the TCEQ to discuss additional remediation measures should the probes continue to be above the regulatory limit.

2. Section 6.0, LFG Control System Installation and Monitoring

- e. The last two paragraphs provide a discussion regarding the installation of passive vents for remedial measures. Please revise the fourth paragraph in**

Section 6.0 to reference the date of installation for the three passive gas vents south of PP-9.

Response:

As requested, the section has been revised to include the installation date for the three passive gas vents south of PP-9.

- f. The letter dated May 23, 2011, which provided to the TCEQ the details of actions taken and proposed to mitigate landfill gas migration in the vicinity of permanent probes PP-6 and PP-9, indicated that the passive vents were installed to mitigate landfill gas exceedances in PP-6. Additionally, the "System Installation" section of the cover letter and Attachment H2, Site Plan, indicated that 17 passive vents were installed in the vicinity of PP-6. However the last paragraph of Section 6.0 only references PP-9. Please revise the last paragraph of this section to include a discussion of the actions taken to mitigate landfill gas in the vicinity of PP-6.**

Response:

As requested, the section has been revised to include the discussion of actions taken to mitigate LFG in the vicinity of PP-6.

- g. As indicated above, the last two paragraphs provide a discussion regarding the installation of passive vents for remedial measures. However, please include this discussion as a sub-section under Section 6.1, Passive Gas Control System, and remove these paragraphs from Section 6.0.**

Response:

As requested, the last two paragraphs of the current Section 6.0 has been moved to Section 6.1.

3. Attachment H2, Site Plan

- a. It appears that four of the existing LFG extraction wells (EW) to the west of EW-43 have been removed from the currently approved Site Plan. Please retain these LFG EWs or provide an explanation of why they were removed.**

Response:

Attachment H2 is not being revised and is to remain as previously approved as described in response to comment #4. However, there are five existing extraction wells to the west of EW-43 which are numbered as EW-74 through

EW-78 in the drawing Attachment H4. These five wells were installed as part of the permit modification submitted to the TCEQ dated May 14, 2002 and TCEQ approved the permit modification dated May 29, 2002.

- b. **In Section 6.0, LFG Control System Installation and Monitoring, it states that three existing vents near PP-9 were converted to active soil vapor extraction wells. However, it appears that these wells are labeled as passive vents (PV) on Attachment H2. Please revise the drawing and names of the wells to reflect their conversation to extraction wells.**

Response:

Attachment H2 is not being revised and is to remain as previously approved as described in response to comment #4. However, as requested, PP-1 through PP-3 labels has been revised as shown in Attachment H4.

- c. **It appears that actions proposed in the May 23, 2011 letter are not consistent with the actions taken as part of this remediation plan. In the May 23, 2011 letter, Drawing 1, Passive Vents Layout, shows proposed passive vent piping to EW-25. However, Attachment H2 of the submitted permit modification shows installed gas collection piping to an existing condensate sump. Please provide an explanation of how the installation of piping from these converted passive vents to an existing condensate sump is beneficial to mitigating landfill gas in the vicinity of PP-9. Additionally, please indicate why it was decided to install piping to the condensate sump rather than the existing EW-25.**

Response:

At the time of construction, it was noted that more vacuum was available in the existing LFG piping near condensate sump CS-05 than at the lateral line at EW-25. In addition to having more vacuum available at this location, the connection to the existing LFG piping near CS-05 required less piping, which in turn results in less pressure losses and more efficient operations. As such the connection point to the existing LFG piping was moved during construction.

4. **It appears that Attachment H3, Trench/Passive Vent Location, included in the permit modification regarding the Remediation Plan for Probe PP-9 issued June 15, 2010 has been replaced by Attachment H3, Passive Vent Details in the current submittal. Please retain the currently approved Attachment H3, Trench/Passive Vent Location, and provide an additional figure in Attachment H of the Landfill Gas Management Plan for the passive vent details related to the most recent**

Ms. Christine M. Bergren
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Page 5

modification submittal. Additionally, please retain the reference to Attachment H3 in the narrative for the remediation plan issued on June 15, 2010.

Response:

As requested, we are not revising Attachments H2 and H3 and they are to remain as previously approved. In order to add/update the new LFG features at the site, Attachment H4 through H7 has been included in Appendix H. The following summarizes the additional documents added to the existing Appendix H.

- Attachment H4: 2011 Remediation Plan [Added]
- Attachment H5: Passive Vent Details [Added]
- Attachment H6: Passive Vent Lithologic Logs [Added]
- Attachment H7: Driller's Passive Vent Completion Reports [Added]

- 5. Please provide a Table of Contents for the application which reflects any changes made to the text or figures within the application. Per 30 TAC §330.57(g)(3), the table of contents shall be sealed as required by the Texas Engineering Practice Act. Please ensure all pages of the table of contents are sealed appropriately.**

Response:

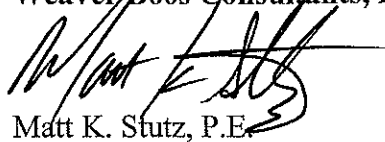
As requested, Table of Contents has been revised to reflect the changes made to the existing LGMP.

One original and one copy of this response letter are provided for your use and distribution. To facilitate your review, we have included copies of the LGMP revisions in both a clean and redline/strikeout format. In addition, one copy has been provided to the appropriate regional office, and a copy of this submittal was placed in the site operating record. Please note that an applicant certification consistent with 30 TAC §305.70(f) and §305.44 is included on page 10 of the attached Part I Form in Attachment 2 of this submittal.

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Page 6

Should you have any additional questions or require further clarification, please feel free to contact us.

Sincerely,
Weaver Boos Consultants, LLC-Southwest



Matt K. Stutz, P.E.
LFG/Air Quality Manager- Principal

Attachments: Attachment 1: Attachment 14 Replacement Pages
Attachment 2: Part I Form
Attachment 3: Attachment 14 Revision Pages (Redline/Strikeout Format)

cc: Sam Barrett, TCEQ Region 4 Office
Lonnie R. Banks, City of Garland
ChiCchi Folorunso, City of Garland
Divya Garrepalli, City of Garland

ATTACHMENT 1

ATTACHMENT 14 REVISION PAGES

**CITY OF GARLAND CASTLE DRIVE LANDFILL
DALLAS COUNTY, TEXAS
MSW PERMIT NO. 1062A**

PERMIT MODIFICATION

**ATTACHMENT 14
LANDFILL GAS MANAGEMENT PLAN**

Prepared for

City of Garland

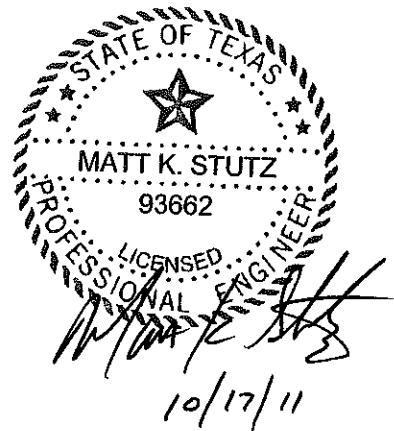
April 1994

Revised April 1998

Revised May 2002

Revised January 2010

Revised October 2011



Prepared by

Weaver Boos Consultants, LLC-Southwest

TBPE Registration No. F-3727

6420 Southwest Boulevard, Suite 206

Fort Worth, Texas 76109

817-735-9770

Project No. 0647-01-11-25-06

| | | |
|------------|---|--------------|
| 5.0 | CONTINGENCY PLAN | 14-19 |
| 5.1 | Contingency Plan Guidelines | 14-19 |
| 5.2 | On-Site Structures Monitoring | 14-21 |
| 5.2.1 | Immediate Action | 14-21 |
| 5.2.2 | Action Within 7-days | 14-21 |
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| 5.2.3.1 | Prepare a Remediation Plan | 14-21 |
| 5.2.3.2 | Implementation of the Plan | 14-22 |
| 5.3 | Property Boundary Monitoring | 14-22 |
| 5.3.1 | Immediate Action | 14-22 |
| 5.3.2 | Action Within 7-days | 14-22 |
| 5.3.3 | Action Within 60-days | 14-23 |
| 5.3.3.1 | Prepare a Remediation Plan | 14-23 |
| 5.3.3.2 | Implementation of the Plan | 14-23 |
| 5.4 | Underground Utility Trench Vent Monitoring | 14-23 |
| 5.4.1 | Immediate Action | 14-23 |
| 5.4.2 | Action Within 7-days | 14-24 |
| 5.4.3 | Action Within 60-days | 14-24 |
| 5.4.3.1 | Prepare a Remediation Plan | 14-24 |
| 5.4.3.2 | Implementation of the Plan | 14-24 |
| 5.5 | Remediation Plan Status/Monitoring | 14-24 |
| 6.0 | LFG CONTROL SYSTEM INSTALLATION AND MONITORING | 14-25 |
| 6.1 | Passive Gas Control System | 14-25 |
| 6.1.1 | Monitoring | 14-26 |
| 6.2 | Active Gas Control System | 14-26 |
| 6.2.1 | Gas Collection System | 14-26 |
| 6.2.2 | Gas Utilization/Control System | 14-27 |
| 7.0 | SAFETY | 14-28 |

APPENDIX A

January 1994 Subsurface Methane Gas Survey Results

APPENDIX B

Perimeter Gas Probe Monitoring Field Data Form

APPENDIX C

Perimeter Gas Probe Details

APPENDIX D

Example Boring Log

APPENDIX E

Example Perimeter Gas Probe Construction

APPENDIX F

Sierra Monitor Instruction Manual



APPENDIX G

Portable Gas Indicator Instruction Manual

APPENDIX H

Passive Gas Vent Details and Locations [Added Attachments H4 through H7)

APPENDIX I

Perimeter Probe Design Depths

APPENDIX J

First Quarter Monitor Probe Report



5.4.2 Action Within 7-days

The Facility Manager/Site Supervisor will prepare a brief report to include:

- Results of any additional monitoring.
- Summary of actions taken included in 5.3.1 above.

5.4.3 Action Within 60-days

5.4.3.1 Prepare a Remediation Plan

A remediation plan will be prepared to include the following:

- Nature and extent of the problem.
- Proposed permanent (or a long term) remedial action(s) such as installation of passive and/or active gas control system.
- Copy of the plan will be provided to the concerned officials for records.

5.4.3.2 Implementation of the plan

Necessary steps will be taken and the proposed plan will be implemented. The officials involved will be notified.

5.5 Remediation Plan Status/Monitoring

Once a remediation plan has been implemented in an effort to mitigate the methane levels at a probe(s), the site will begin a 6-month evaluation period to determine the effectiveness of the remediation efforts. During this 6-month evaluation period the site, the probe(s) will be monitored monthly and the monthly results will be submitted quarterly to the TCEQ. Following this 6-month evaluation period an evaluation report will be submitted to the TCEQ. Should the monitoring data indicate that methane levels in the probe(s) is trending down or is below the regulatory limit, monthly monitoring. If however, after the 6-month evaluation period the probe(s) continues to have elevated methane readings with no significant change in the methane concentration, a new remediation plan will be submitted to the TCEQ detailing additional remediation efforts.

A probe will be considered remediated and will return to quarterly monitoring once the probe(s) has been below the regulatory limit for six consecutive monthly readings. The TCEQ will be notified when a probe has been remediated and is returning to quarterly monitoring.

6.0 LFG CONTROL SYSTEM INSTALLATION AND MONITORING

The objective of the active gas control system installation is to prevent the migration of landfill gas.

The results of Landfill Gas Monitoring, described in Section 4.0, will be presented to TCEQ for review. If a LFG control system is required at the landfill to control/prevent off-site gas migration, the City of Garland will pursue one of two alternatives.

- Passive Gas Control System
- Active Gas Control System

An active gas system is currently in place for the landfill due to potential beneficial use of the landfill gas. However, the City may adopt a passive gas control system in the future if changes in the economics of an active system, applicable regulations, and/or site conditions occur.

6.1 Passive Gas Control System

Passive vents can release some of the pressure of landfill gas within the waste and soil, thus reducing the amount of localized gas migration. The passive system is relatively economical to design, install and operate. Typical passive gas control system consist of gas “vents”. The vents are simple in design and require low maintenance. The design of a typical passive gas control vent is shown in **Appendix H**.

The proposed passive gas control system at the City of Garland Castle Drive Landfill will consist of gas vents installed in the refuse or in the existing ground outside the limits of waste. The passive vents will initially free vent into the atmosphere, thereby reducing subsurface pressure and control local lateral migration. The design and the spacing of the vent wells will be such that in the future, if necessary, the system could be converted into an “Active Gas Control system”.

The locations of the passive vents will be determined using any one of the following three methods:

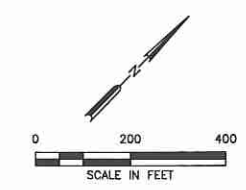
A. Surface monitoring and observations:

Observations of the surface conditions at the site can aid in determining the best location(s) for passive vents. Venting cracks, stressed vegetation, and odors are all indicative of gas migration through the soil cover. In addition, monitoring of the surface may be conducted to locate less visible emission sources.

Three passive gas vents have been installed south of landfill gas permanent probe PP-9 in August 2009 to reduce the potential for off-site landfill gas migration. Attachment H2 and H3 depict the location of the three passive vents.

[2011 Installation] The 2011 installation, as shown in Attachment H4, includes the installation of seventeen passive vents in the vicinity of PP-6 and conversion of the three existing vents near PP-9 to active soil vapor extraction wells.

APPENDIX H
PASSIVE GAS VENT DETAILS AND LOCATIONS



- LEGEND**
- PERMIT BOUNDARY
 - LIMITS OF WASTE
 - EXISTING CONTOUR
 - STATE PLANE GRID COORDINATE
 - EXISTING FENCE
 - PP-5 LANDFILL GAS MONITORING PERMANENT PROBE
 - MW-10 EXISTING GROUNDWATER MONITORING WELL
 - EW-75 EXISTING LFG EXTRACTION WELL
 - EW-36 EXISTING LIQUID/LFG EXTRACTION WELL
 - SVE-1 EXISTING SOIL VAPOR EXTRACTION WELL
 - EXISTING LFG COLLECTION PIPING
 - CS-01 EXISTING CONDENSATE SUMP
 - EXISTING LFG ISOLATION VALVE
 - EXISTING AIR SUPPLY PIPING
 - EXISTING CONDENSATE FORCEMAIN
 - EXISTING WATER LINE
 - EXISTING LFG TRENCH
 - EXISTING SANITARY SEWER LINE
 - EXISTING LEACHATE COLLECTION TRENCH
 - PV-8 INSTALLED PASSIVE VENT
 - INSTALLED GAS COLLECTION PIPING

NOTE:
1. EXISTING CONTOURS COMPILED FROM AERIAL PHOTOGRAPHY, FLOWN 8-01-2007 BY DALLAS AERIAL SURVEYS, INC. DALLAS, TEXAS. COORDINATE SYSTEM BASED ON STATE PLANE NAD 83, TEXAS NORTH CENTRAL.



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| <input checked="" type="checkbox"/> FOR PERMITTING PURPOSES ONLY | |
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| <input type="checkbox"/> CLIENT APPROVAL BY: | |
| DATE: 10/2011 | DRAWN BY: VRS |
| FILE: 0647-01-11 | DESIGN BY: SR |
| CAD: H4-SITE PLAN.DWG | REVIEWED BY: MKS |
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| NO. | DATE | DESCRIPTION |
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2011 REMEDIATION PLAN
SITE PLAN

CASTLE DRIVE LANDFILL
DALLAS COUNTY, TEXAS

Weaver Boos Consultants

TBPE REGISTRATION NO. F-3727

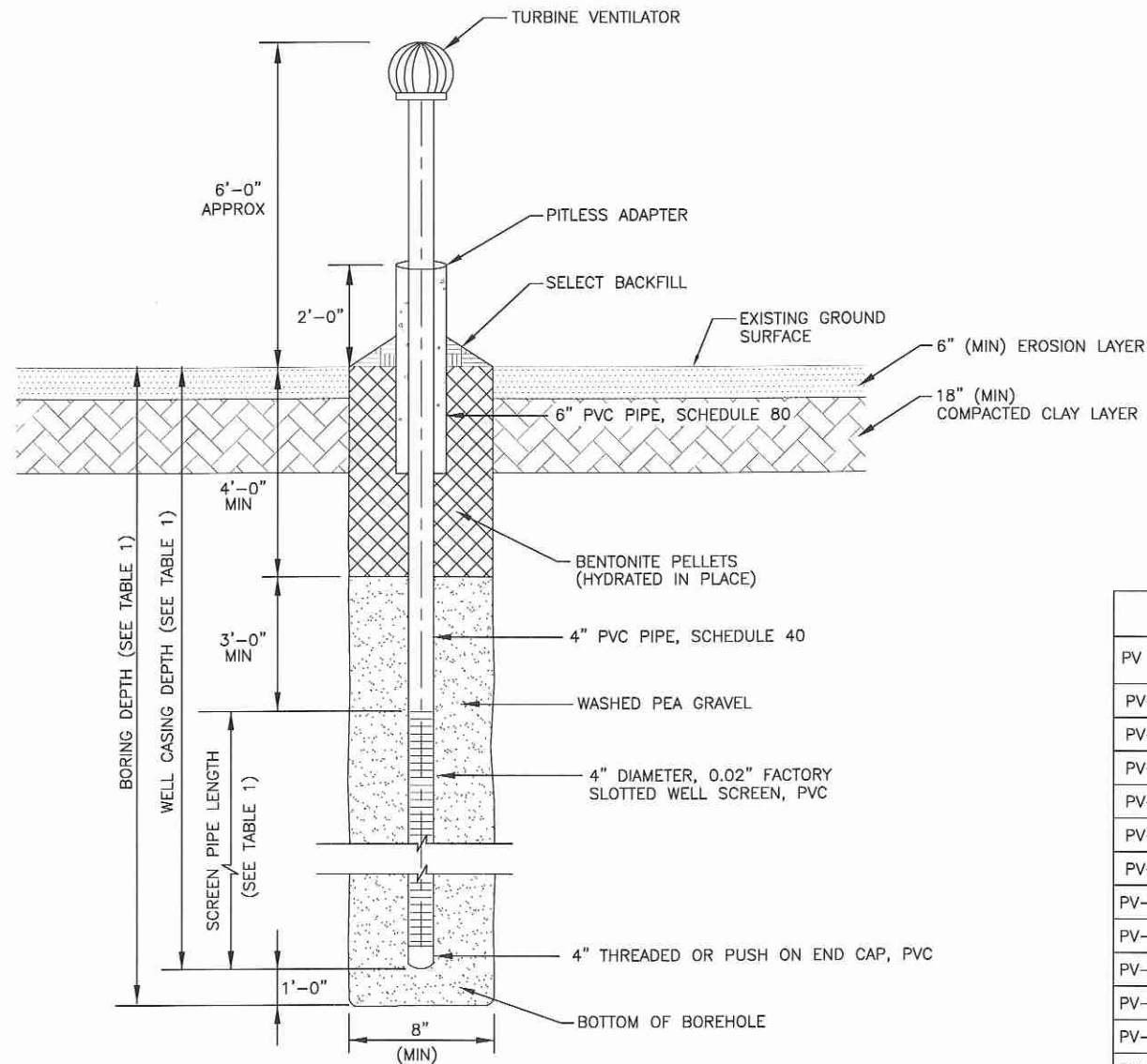
CHICAGO, IL
NAPERVILLE, IL
COLUMBUS, OH
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FORT WORTH, TX
(817) 735-9770

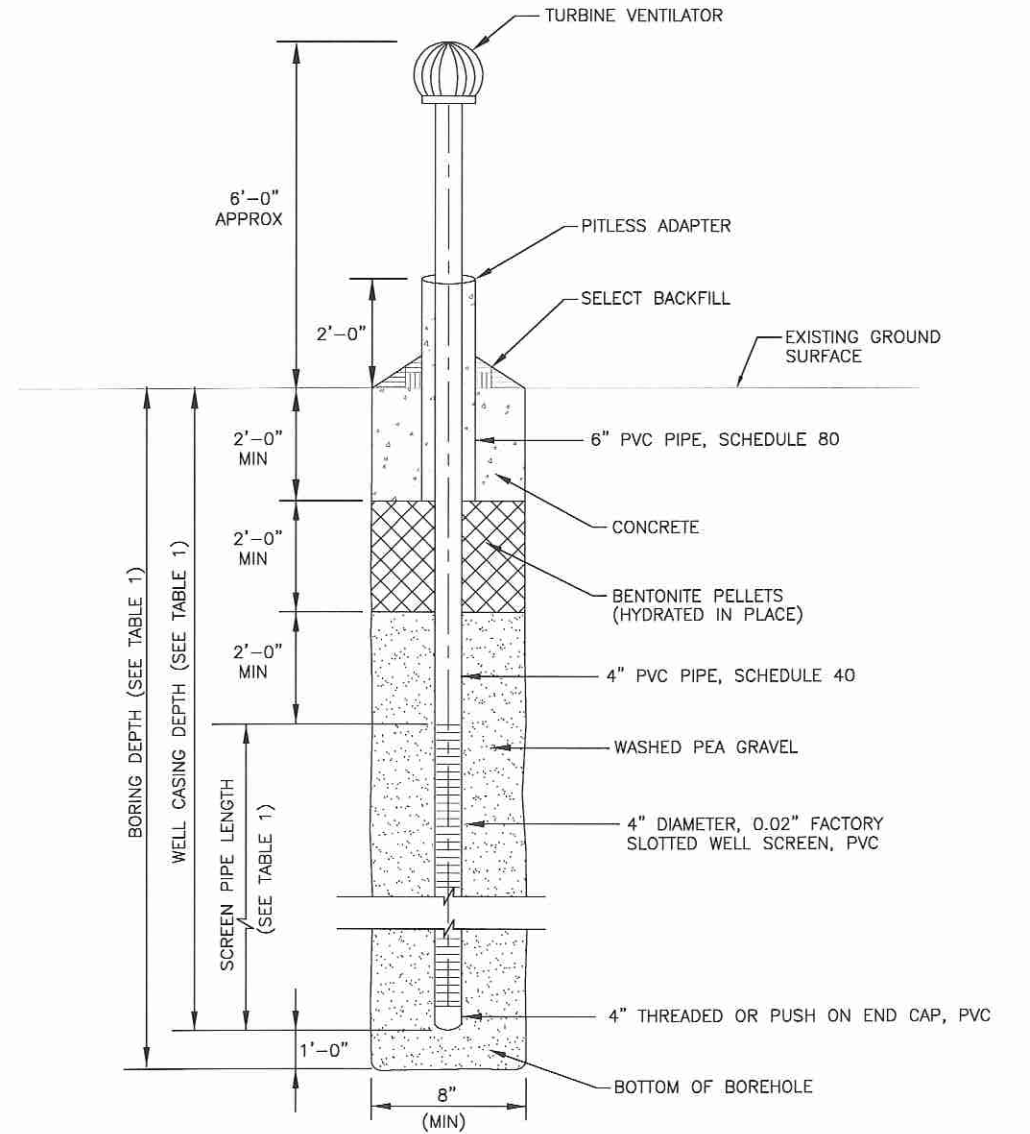
GRIFFITH, IN
SOUTH BEND, IN
SPRINGFIELD, IL
ST. LOUIS, MO

ATTACHMENT H4

O:\0647\01\IFG NOTICE MOD (06-11)\NOD\ATT H4-PV LAYOUT.dwg, 10/5/2011 9:34:19 AM, r sellers



PASSIVE VENT
(INSIDE LIMITS OF WASTE) 2
H5
NTS



PASSIVE VENT
(OUTSIDE LIMITS OF WASTE) 3
H5
NTS

| PV ID | BORING DEPTH (FT) | WELL CASING DEPTH (FT) | SCREEN PIPE LENGTH (FT) |
|-------|-------------------|------------------------|-------------------------|
| PV-4 | 48 | 47 | 41 |
| PV-5 | 45 | 44 | 38 |
| PV-6 | 46 | 45 | 39 |
| PV-7 | 43 | 42 | 36 |
| PV-8 | 43 | 42 | 36 |
| PV-9 | 40 | 39 | 33 |
| PV-10 | 41 | 40 | 34 |
| PV-11 | 41 | 40 | 34 |
| PV-12 | 41 | 40 | 34 |
| PV-13 | 41 | 40 | 34 |
| PV-14 | 41 | 40 | 34 |
| PV-15 | 32 | 31 | 24 |
| PV-16 | 25 | 24 | 17 |
| PV-17 | 23 | 22 | 15 |
| PV-18 | 25 | 24 | 18 |
| PV-19 | 20 | 19 | 13 |
| PV-20 | 17 | 16 | 10 |

NOTE:

1. THESE DETAILS ARE APPLICABLE ONLY TO PV-4 THROUGH PV-20. FOR PV-1 THROUGH PV-3 DETAIL PLEASE REFER TO DETAIL 1 IN ATTACHMENT H1.



| <input type="checkbox"/> DRAFT <input checked="" type="checkbox"/> FOR PERMITTING PURPOSES ONLY <input type="checkbox"/> ISSUED FOR CONSTRUCTION <input type="checkbox"/> CLIENT APPROVAL BY: | | PREPARED FOR CITY OF GARLAND | | 2011 REMEDIATION PLAN PASSIVE VENT DETAILS | | | | | | | | | | | | | | | | |
|---|------|---|--|--|------|-------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DATE: 10/2011 FILE: 0647-01-11 CAD: H5-PV DETAILS.DWG | | DRAWN BY: VRS DESIGN BY: SR REVIEWED BY: MKS | | CASTLE DRIVE LANDFILL DALLAS COUNTY, TEXAS | | | | | | | | | | | | | | | | |
| REUSE OF DOCUMENTS THIS DOCUMENT, AND THE DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF WEAVER BOOS CONSULTANTS, LLC - SOUTHWEST AND IS NOT TO BE USED IN WHOLE OR IN PART, WITHOUT THE WRITTEN AUTHORIZATION OF WEAVER BOOS CONSULTANTS, LLC - SOUTHWEST. | | REVISIONS <table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table> | | NO. | DATE | DESCRIPTION | | | | | | | | | | | | | Weaver Boos Consultants TBPE REGISTRATION NO. F-3727 | |
| NO. | DATE | DESCRIPTION | | | | | | | | | | | | | | | | | | |
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| CHICAGO, IL NAPERVILLE, IL COLUMBUS, OH DENVER, CO | | FORT WORTH, TX (817) 735-9770 | | GRIFFITH, IN SOUTH BEND, IN SPRINGFIELD, IL ST. LOUIS, MO | | | | | | | | | | | | | | | | |
| ATTACHMENT H5 | | | | | | | | | | | | | | | | | | | | |

ATTACHMENT H6
PASSIVE VENT LITHOLOGIC LOGS

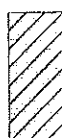
FIGURE 1

KEY TO GEOLOGIC LOGS CASTLE DRIVE LANDFILL 2011 PASSIVE LFG VENT INSTALLATIONS

SUBSURFACE CONDITIONS:

The lithologic log soil and rock descriptions are based on visual field observations and, where indicated on the logs, geotechnical testing. The geotechnical classifications are based only on the samples analyzed. Where no geotechnical classification or analysis is indicated, the stratum classifications are based on visual field classifications only. The lithologic unit contacts shown on the logs indicate approximate boundaries between materials. The actual contacts may be gradational and vary between borehole locations. The visual/manual procedures used for the field classification of soils were performed in general accordance with ASTM Standard D-2488. Soil classifications based on geotechnical laboratory results were performed in general accordance with ASTM Standard D-2487. Water level observations were made at the time of drilling and at subsequent times, as indicated. Future water levels may vary significantly from those indicated due to climatic factors, construction activity, or other factors.

LITHOLOGIC UNITS



CLAY



CLAY FILL

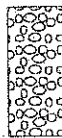


WOOD WASTE
AND CLAY FILL

WELL MATERIALS



Bentonite Pellet
Annular Seal



Washed Pea
Gravel Bottom
Filter Pack



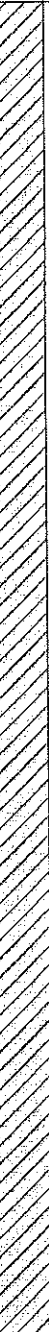
Concrete
Surface
Seal



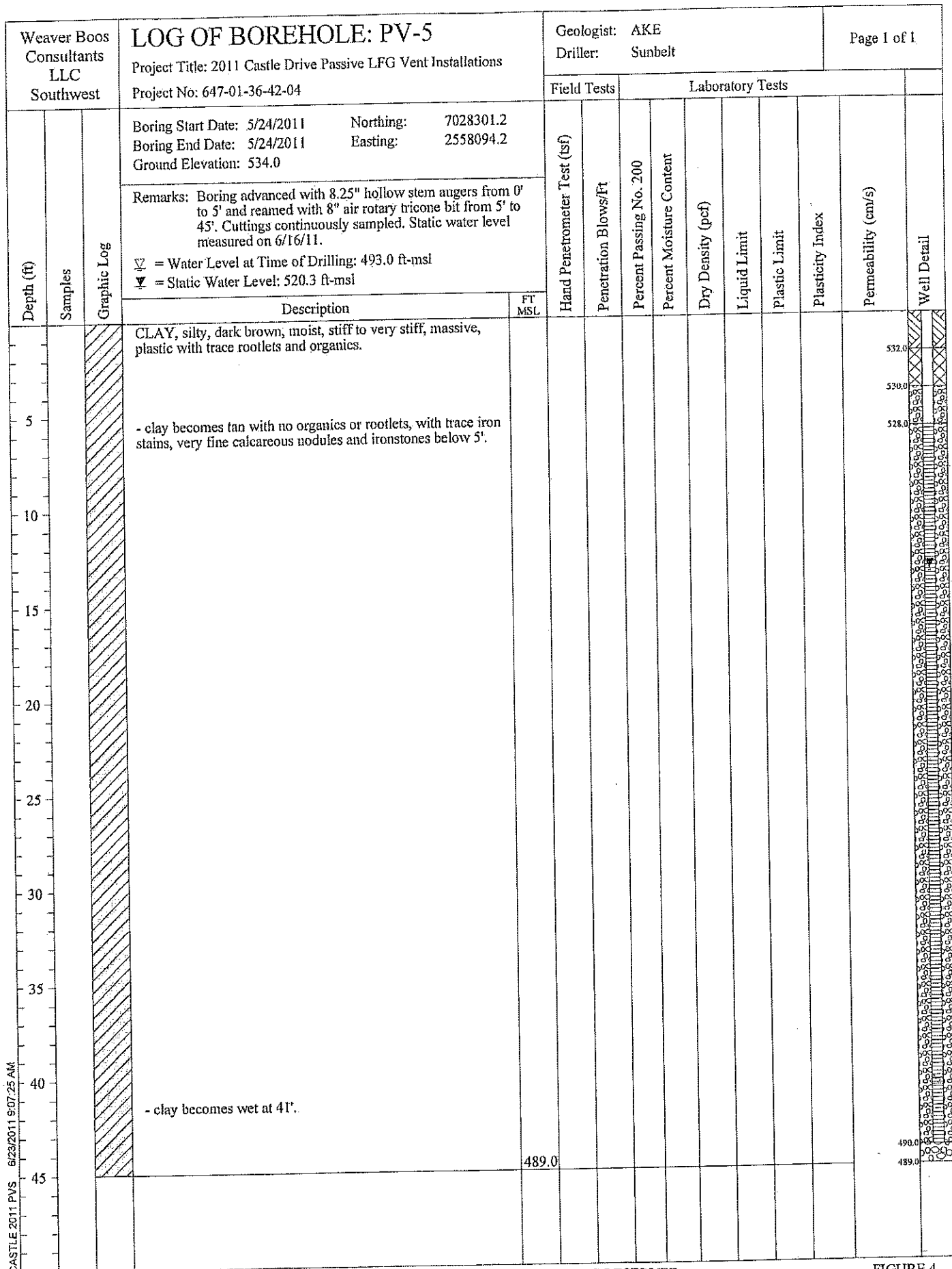
Washed
Pea Gravel
Filter
Pack



Slotted
Well
Screen
Interval

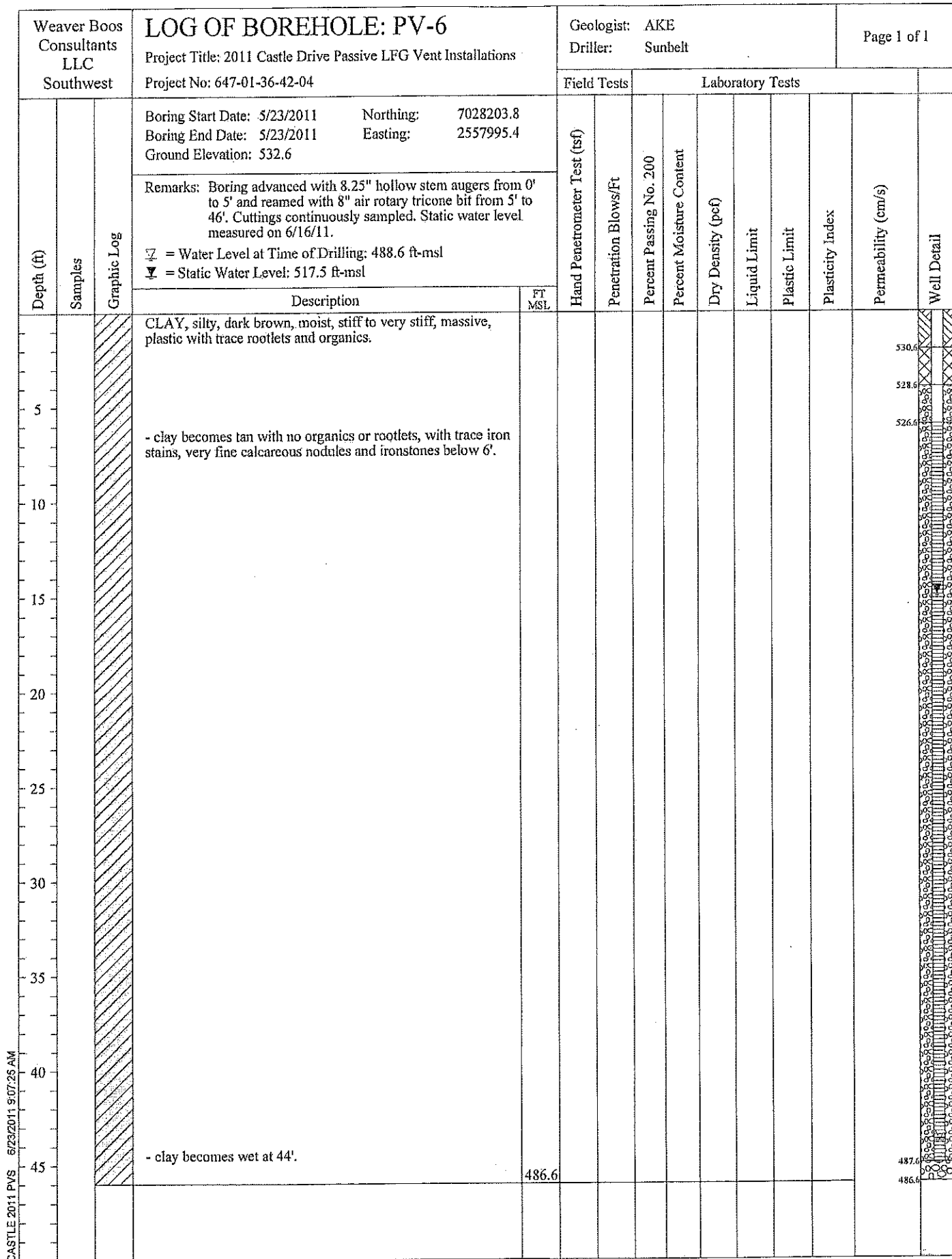
| Weaver Boos Consultants LLC Southwest | | | LOG OF BOREHOLE: PV-4 | | Geologist: AKE Driller: Sunbelt | | Page 1 of 1 | | | | | | | |
|---------------------------------------|---------|--|--|--------|------------------------------------|----------------------|-------------------------|--------------------------|-------------------|--------------|---------------|------------------|---------------------|----------------|
| | | | Project Title: 2011 Castle Drive Passive LFG Vent Installations Project No: 647-01-36-42-04 | | Field Tests | | Laboratory Tests | | | | | | | |
| Depth (ft) | Samples | Graphic Log | Boring Start Date: 5/24/2011 Northing: 7028399.2 Boring End Date: 5/24/2011 Easting: 2558192.9 Ground Elevation: 535.4 | | Hand Penetrometer Test (tsf) | Penetration Blows/Ft | Percent Passing No. 200 | Percent Moisture Content | Dry Density (pcf) | Liquid Limit | Plastic Limit | Plasticity Index | Permeability (cm/s) | Well Detail |
| | | | Remarks: Boring advanced with 8.25" hollow stem augers from 0' to 5' and reamed with 8" air rotary tricone bit from 5' to 48'. Cuttings continuously sampled. Static water level measured on 6/16/11. ▽ = Water Level at Time of Drilling: Not Observed ▼ = Static Water Level: 520.7 ft-msl | | | | | | | | | | | |
| | | | Description | FT MSL | | | | | | | | | | |
| 5 | |  | CLAY, silty, dark brown, moist, stiff to very stiff, massive, plastic with trace rootlets and organics. | | | | | | | | | | | 533.4 |
| 10 | | | - clay becomes tan with no organics or rootlets, with trace iron stains, very fine calcareous nodules and ironstones below 5'. | | | | | | | | | | | 531.4 |
| 15 | | | | | | | | | | | | | | 529.4 |
| 20 | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | | | |
| 45 | | | | | | | | | | | | | | |
| | | | - abundant large friable very fine to cobble sized calcareous concretions below 26'. | 487.4 | | | | | | | | | | 488.4 487.4 |

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CASTLE 2011 PVS 5/23/2011 9:07:25 AM


FIGURE 4



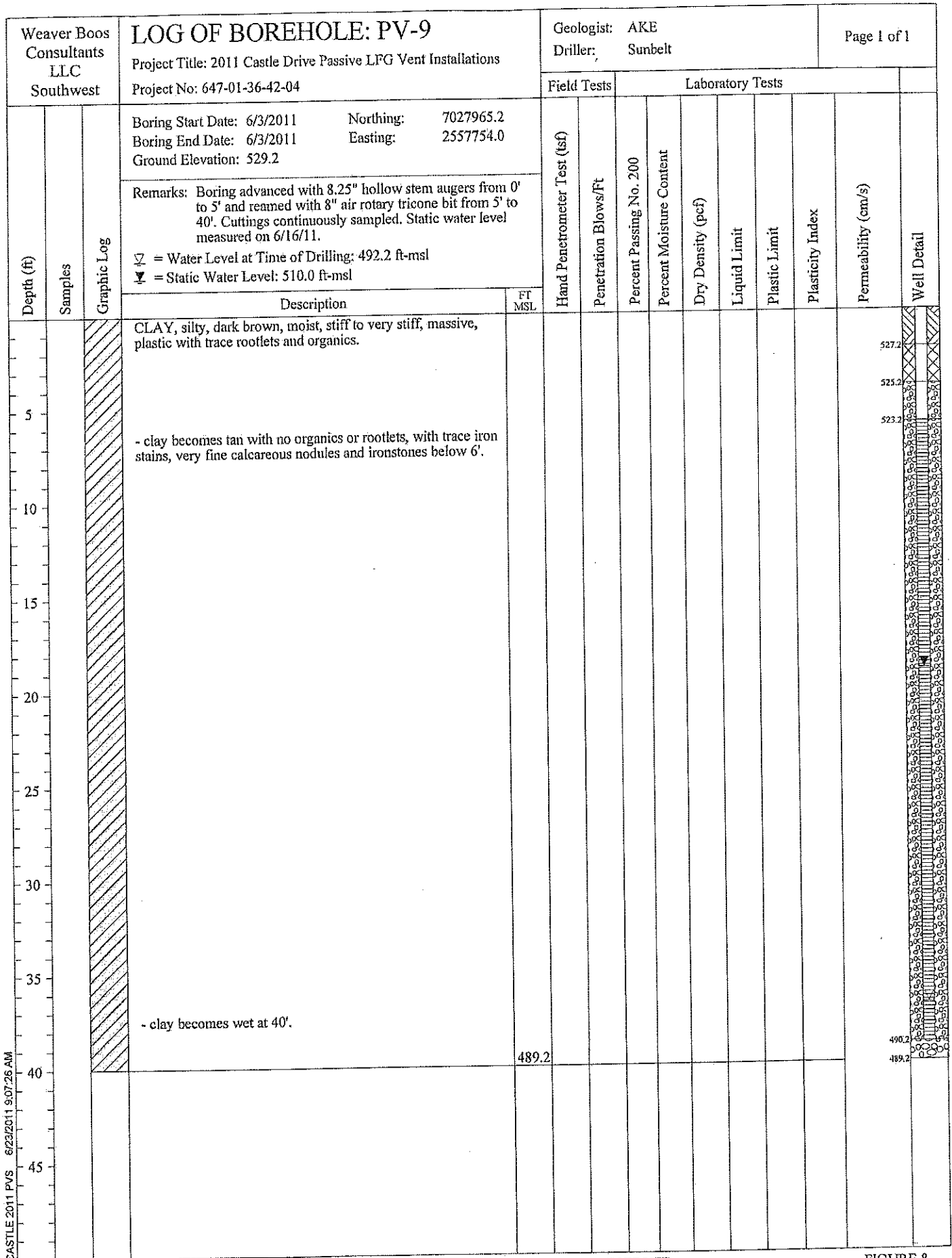
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| Weaver Boos Consultants LLC Southwest | | | LOG OF BOREHOLE: PV-7 | | Geologist: AKE Driller: Sunbelt | | Page 1 of 1 | | | | | | | |
|---------------------------------------|---------|--|--|--------|------------------------------------|----------------------|-------------------------|--------------------------|-------------------|--------------|---------------|------------------|---------------------|----------------|
| | | | Project Title: 2011 Castle Drive Passive LFG Vent Installations Project No: 647-01-36-42-04 | | Field Tests | | Laboratory Tests | | | | | | | |
| Depth (ft) | Samples | Graphic Log | Boring Start Date: 5/20/2011 Northing: 7028106.9 Boring End Date: 5/20/2011 Easting: 2557894.9 Ground Elevation: 530.4 | | Hand Penetrometer Test (tsf) | Penetration Blows/Ft | Percent Passing No. 200 | Percent Moisture Content | Dry Density (pcf) | Liquid Limit | Plastic Limit | Plasticity Index | Permeability (cm/s) | Well Detail |
| | | | Remarks: Boring advanced with 8.25" hollow stem augers from 0' to 5' and reamed with 8" air rotary tricone bit from 5' to 43'. Cuttings continuously sampled. Static water level measured on 6/16/11. ▽ = Water Level at Time of Drilling: 489.4 ft-msl ▽ = Static Water Level: 510.9 ft-msl | | | | | | | | | | | |
| | | | Description | FT MSL | | | | | | | | | | |
| 5 | |  | CLAY, silty, dark brown, moist, stiff to very stiff, massive, plastic with trace rootlets and organics. | | | | | | | | | | | 528.4 |
| 10 | | | - clay becomes tan with no organics or rootlets, with trace iron stains, very fine calcareous nodules and ironstones below 6'. | | | | | | | | | | | 526.4 |
| 15 | | | | | | | | | | | | | | 524.4 |
| 20 | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | | | |
| 45 | | | - clay becomes wet at 41'. | 487.4 | | | | | | | | | | 488.4 487.4 |

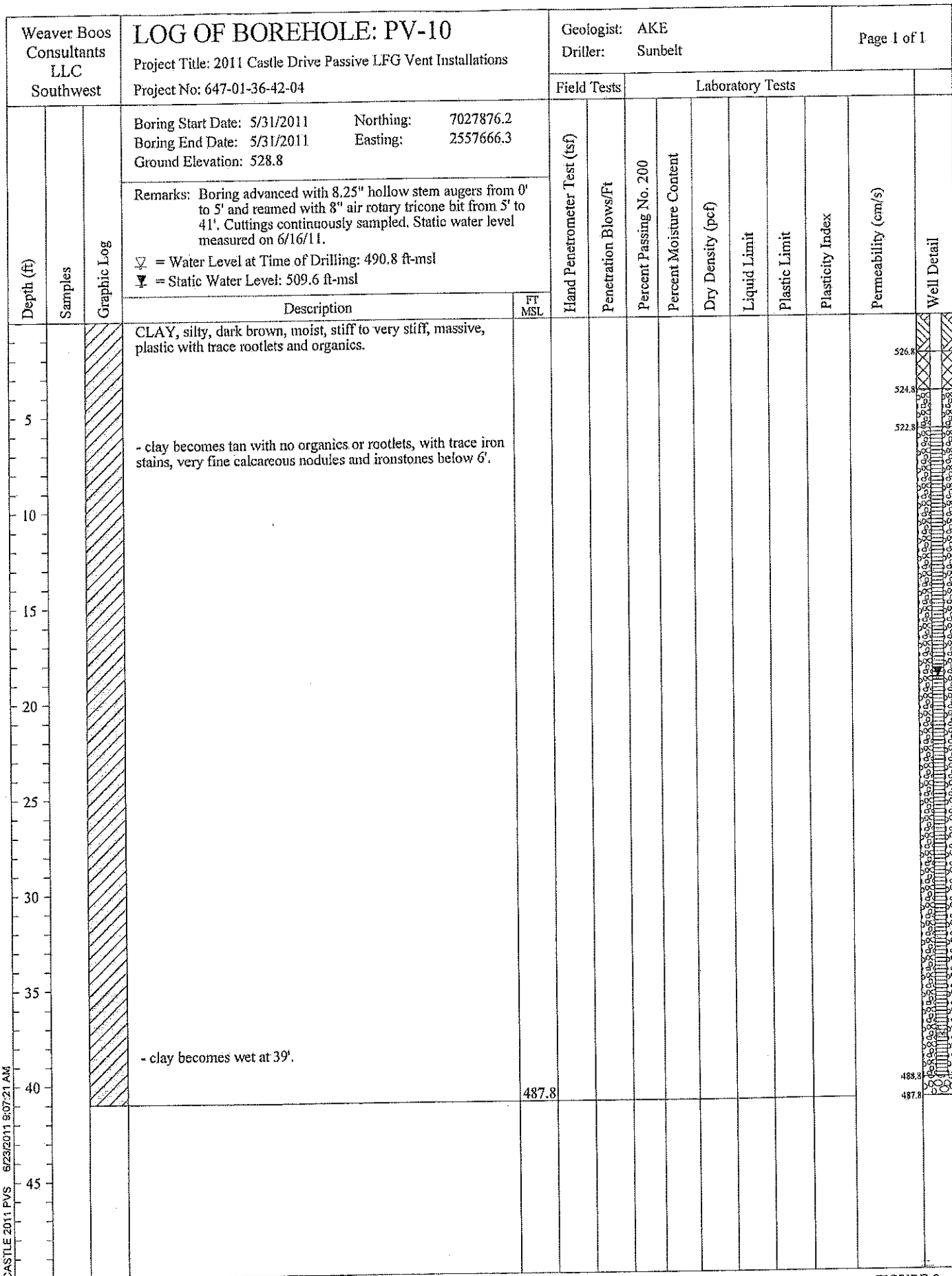
CASTLE 2011 PVS 6/23/2011 9:07:26 AM

| Weaver Boos Consultants LLC Southwest | | | LOG OF BOREHOLE: PV-8 | | Geologist: AKE Driller: Sunbelt | | Page 1 of 1 | | | | | | | |
|---------------------------------------|---------|--|--|----------------------------|------------------------------------|----------------------|-------------------------|--------------------------|-------------------|--------------|---------------|------------------|---------------------|-------------------------|
| | | | Project Title: 2011 Castle Drive Passive LFG Vent Installations Project No: 647-01-36-42-04 | | Field Tests | | Laboratory Tests | | | | | | | |
| Depth (ft) | Samples | Graphic Log | Description | FT MSL | Hand Penetrometer Test (tsf) | Penetration Blows/Ft | Percent Passing No. 200 | Percent Moisture Content | Dry Density (pcf) | Liquid Limit | Plastic Limit | Plasticity Index | Permeability (cm/s) | Well Detail |
| | | | Boring Start Date: 5/20/2011 Northing: 7028036.2 Boring End Date: 5/20/2011 Easting: 2557823.7 Ground Elevation: 529.8 Remarks: Boring advanced with 8.25" hollow stem augers from 0' to 5' and reamed with 8" air rotary tricone bit from 5' to 43'. Cuttings continuously sampled. Static water level measured on 6/16/11. ▽ = Water Level at Time of Drilling: 490.8 ft-msl ▾ = Static Water Level: 510.9 ft-msl | | | | | | | | | | | |
| | | | CLAY, silty, dark brown, moist, stiff to very stiff, massive, plastic with trace rootlets and organics. | | | | | | | | | | | |
| 5 | |  | - clay becomes tan with no organics or rootlets, with trace iron stains, very fine calcareous nodules and ironstones below 6'. | | | | | | | | | | | 527.8 525.8 523.8 |
| 10 | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | | | |
| 40 | | | | - clay becomes wet at 39'. | | | | | | | | | | |
| 45 | | | | | | | | | | | | | | |
| | | | | | 486.8 | | | | | | | | | |

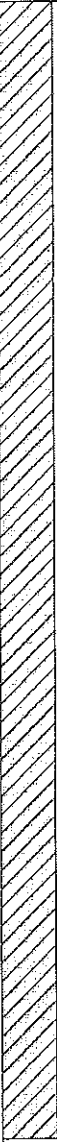
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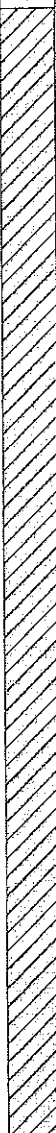
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CASTLE 2011 PVS 6/23/2011 9:07:21 AM

| Weaver Boos Consultants LLC Southwest | | | LOG OF BOREHOLE: PV-11 | | Geologist: AKE Driller: Sunbelt | | Page 1 of 1 | | | | | | | |
|---------------------------------------|---------|--|--|--------|------------------------------------|----------------------|-------------------------|--------------------------|-------------------|--------------|---------------|------------------|---------------------|----------------|
| | | | Project Title: 2011 Castle Drive Passive LFG Vent Installations Project No: 647-01-36-42-04 | | Field Tests | | Laboratory Tests | | | | | | | |
| Depth (ft) | Samples | Graphic Log | Boring Start Date: 5/31/2011 Northing: 7027784.2 Boring End Date: 5/31/2011 Easting: 2557582.4 Ground Elevation: 528.1 | | Hand Penetrometer Test (tsf) | Penetration Blows/Ft | Percent Passing No. 200 | Percent Moisture Content | Dry Density (pcf) | Liquid Limit | Plastic Limit | Plasticity Index | Permeability (cm/s) | Well Detail |
| | | | Remarks: Boring advanced with 8.25" hollow stem augers from 0' to 5' and reamed with 8" air rotary tricone bit from 5' to 41'. Cuttings continuously sampled. Static water level measured on 6/16/11. ▽ = Water Level at Time of Drilling: 489.1 ft-msl ▼ = Static Water Level: 505.9 ft-msl | | | | | | | | | | | |
| | | | Description | FT MSL | | | | | | | | | | |
| 5 | |  | CLAY, silty, dark brown, moist, stiff to very stiff, massive, plastic with trace rootlets and organics. | | | | | | | | | | | 526.1 |
| 10 | | | - clay becomes tan with no organics or rootlets, with trace iron stains, very fine calcareous nodules and ironstones below 6'. | | | | | | | | | | | 524.1 |
| 15 | | | | | | | | | | | | | | 522.1 |
| 20 | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | | | |
| 40 | | | - clay becomes wet at 39'. | 487.1 | | | | | | | | | | 488.1 487.1 |
| 45 | | | | | | | | | | | | | | |

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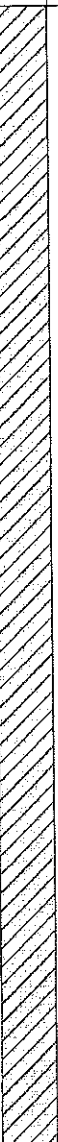
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|---------------------------------------|---------|--|--|--|------------------------------|------------------------------------|-------------------------|--------------------------|-------------------|--------------|---------------|------------------|---------------------|-------------------------|
| Weaver Boos Consultants LLC Southwest | | | LOG OF BOREHOLE: PV-12 | | | Geologist: AKE Driller: Sunbelt | | Page 1 of 1 | | | | | | |
| | | | Project Title: 2011 Castle Drive Passive LFG Vent Installations Project No: 647-01-36-42-04 | | | Field Tests | | Laboratory Tests | | | | | | |
| Depth (ft) | Samples | Graphic Log | Boring Start Date: 5/19/2011 Northing: 7027765.4 Boring End Date: 5/19/2011 Easting: 2557566.1 Ground Elevation: 527.9 | | Hand Penetrometer Test (tsf) | Penetration Blows/Ft | Percent Passing No. 200 | Percent Moisture Content | Dry Density (pcf) | Liquid Limit | Plastic Limit | Plasticity Index | Permeability (cm/s) | Well Detail |
| | | | Remarks: Boring advanced with 8.25" hollow stem augers from 0' to 5' and reamed with 8" air rotary tricone bit from 5' to 41'. Cuttings continuously sampled. Static water level measured on 6/16/11. ▽ = Water Level at Time of Drilling: 487.9 ft-msl ▼ = Static Water Level: 505.2 ft-msl | | | | | | | | | | | |
| | | | Description | | FT MSL | | | | | | | | | |
| 5 | |  | CLAY, silty, dark brown, moist, stiff to very stiff, massive, plastic with trace rootlets and organics. | | | | | | | | | | | 525.9 523.9 521.9 |
| 10 | | | - clay becomes tan with no organics or rootlets, with trace iron stains, very fine calcareous nodules and ironstones below 7'. | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | | | |
| 40 | | | - clay becomes wet at 40'. | | 486.9 | | | | | | | | | 487.9 486.9 |
| 45 | | | | | | | | | | | | | | |

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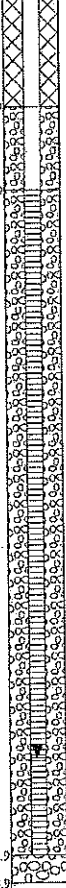

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| Weaver Boos Consultants LLC Southwest | | | LOG OF BOREHOLE: PV-13 | | | Geologist: AKE Driller: Sunbelt | | Page 1 of 1 | | | | | | | |
|---------------------------------------|---------|-------------|--|--|--|------------------------------------|----------------------|-------------------------|--------------------------|-------------------|--------------|---------------|------------------|---------------------|----------------|
| | | | Project Title: 2011 Castle Drive Passive LFG Vent Installations Project No: 647-01-36-42-04 | | | Field Tests | | Laboratory Tests | | | | | | | |
| Depth (ft) | Samples | Graphic Log | Boring Start Date: 5/24/2011 Northing: 7027745.2 Boring End Date: 5/25/2011 Easting: 2557551.6 Ground Elevation: 527.8 | | Remarks: Boring advanced with 8.25" hollow stem augers from 0' to 5' and reamed with 8" air rotary tricone bit from 5' to 41'. Cuttings continuously sampled. Static water level measured on 6/16/11. ▽ = Water Level at Time of Drilling: Not Observed ▼ = Static Water Level: 504.4 ft-msl | Hand Penetrometer Test (tsf) | Penetration Blows/Ft | Percent Passing No. 200 | Percent Moisture Content | Dry Density (pcf) | Liquid Limit | Plastic Limit | Plasticity Index | Permeability (cm/s) | Well Detail |
| | | | Description | | | | | | | | | | | | |
| 5 | | | CLAY, silty, dark brown, moist, stiff to very stiff, massive, plastic with trace rootlets and organics. | | | | | | | | | | | | 525.8 |
| | | | - clay becomes tan with no organics or rootlets, with trace iron stains, very fine calcareous nodules and ironstones below 5'. | | | | | | | | | | | | 523.8 |
| 10 | | | | | | | | | | | | | | | 521.8 |
| 15 | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | | | | |
| 40 | | | - clay becomes wet at 40'. | | | 486.8 | | | | | | | | | 487.8 486.8 |
| 45 | | | | | | | | | | | | | | | |

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| | | | | | | | | | | | | | | |
|---------------------------------------|---------|--|--|--------|--|------------------------------------|----------------------|-------------------------|--------------------------|-------------------|--------------|---------------|------------------|---------------------|
| Weaver Boos Consultants LLC Southwest | | | LOG OF BOREHOLE: PV-14 Project Title: 2011 Castle Drive Passive LFG Vent Installations Project No: 647-01-36-42-04 | | | Geologist: AKE Driller: Sunbelt | | Page 1 of 1 | | | | | | |
| Depth (ft) | Samples | Graphic Log | Boring Start Date: 5/19/2011 Northing: 7027702.6 Boring End Date: 5/19/2011 Easting: 2557522.7 Ground Elevation: 527.3 | | | Field Tests | | Laboratory Tests | | | | | | |
| | | | Remarks: Boring advanced with 8.25" hollow stem augers from 0' to 5' and reamed with 8" air rotary tricone bit from 5' to 41'. Cuttings continuously sampled. Static water level measured on 6/16/11. ▽ = Water Level at Time of Drilling: 488.3 ft-msl ▴ = Static Water Level: 503.6 ft-msl | | | Hand Penetrometer Test (tsf) | Penetration Blows/Ft | Percent Passing No. 200 | Percent Moisture Content | Dry Density (pcf) | Liquid Limit | Plastic Limit | Plasticity Index | Permeability (cm/s) |
| | | | Description | FT MSL | | | | | | | | | | |
| 5 | |  | CLAY, silty, dark brown, moist, stiff to very stiff, massive, plastic with trace rootlets and organics. | | | | | | | | | | | 523.3 |
| | | | - clay becomes tan with no organics or rootlets, with trace iron stains, very fine calcareous nodules and ironstones below 5'. | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | | | |
| 40 | | | - clay becomes wet at 39'. | 486.3 | | | | | | | | | | 487.3 486.3 |
| 45 | | | | | | | | | | | | | | |

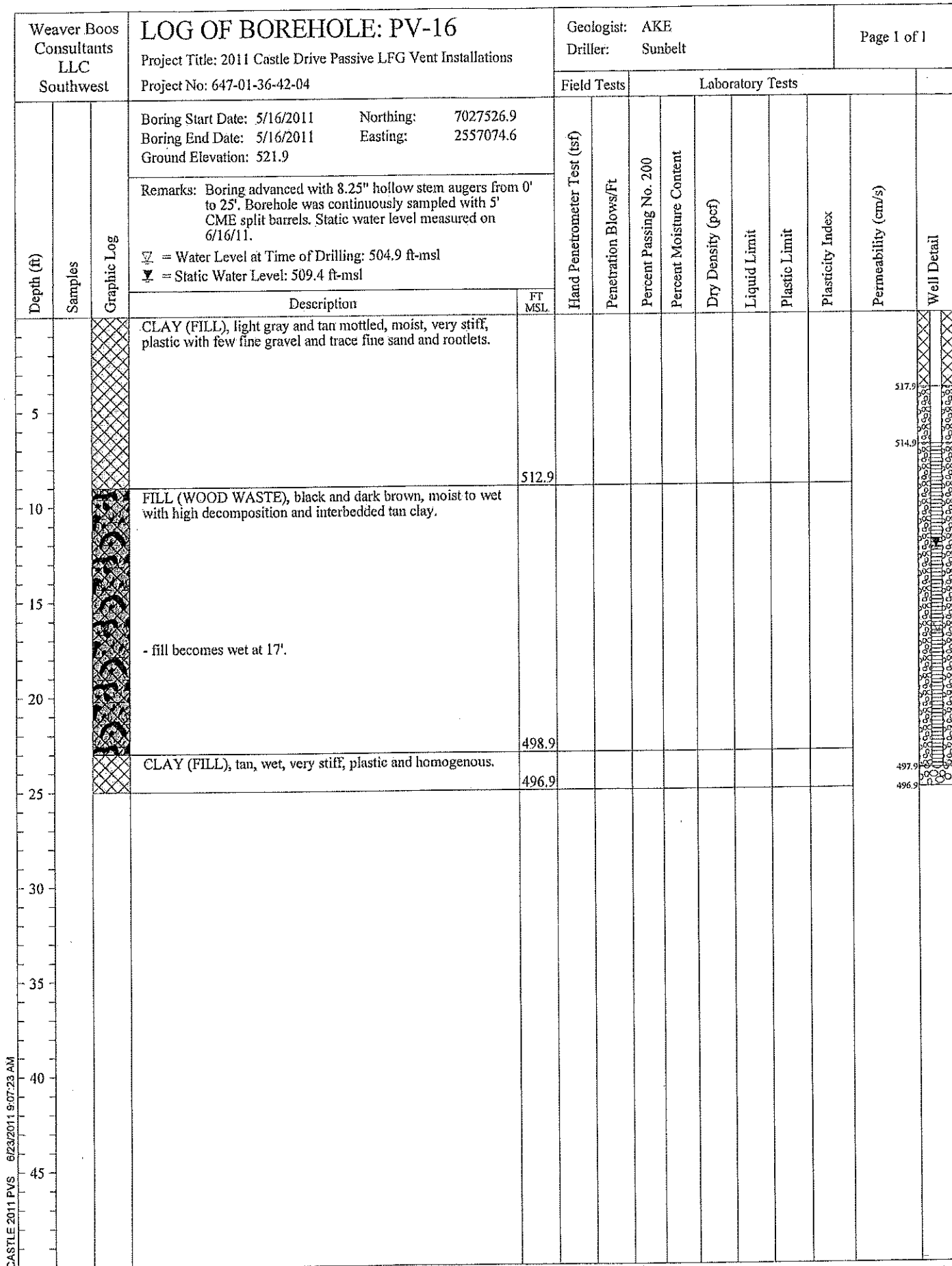
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|---------------------------------------|---------|--|--|--------|------------------------------|------------------------------------|-------------------------|--------------------------|-------------------|--------------|---------------|------------------|---------------------|--|
| Weaver Boos Consultants LLC Southwest | | | LOG OF BOREHOLE: PV-15 | | | Geologist: AKE Driller: Sunbelt | | | Page 1 of 1 | | | | | |
| | | | Project Title: 2011 Castle Drive Passive LFG Vent Installations Project No: 647-01-36-42-04 | | | Field Tests | | Laboratory Tests | | | | | | |
| Depth (ft) | Samples | Graphic Log | Boring Start Date: 5/16/2011 Northing: 7027658.3 Boring End Date: 5/16/2011 Easting: 2557205.9 Ground Elevation: 525.9 | | Hand Penetrometer Test (tsf) | Penetration Blows/Ft | Percent Passing No. 200 | Percent Moisture Content | Dry Density (pcf) | Liquid Limit | Plastic Limit | Plasticity Index | Permeability (cm/s) | Well Detail |
| | | | Remarks: Boring advanced with 8.25" hollow stem augers from 0' to 32'. Borehole was continuously sampled with 5' CME split barrels. Static water level measured on 6/16/11. ▽ = Water Level at Time of Drilling: Not Observed ▽ = Static Water Level: 498.3 ft-msl | | | | | | | | | | | |
| | | | Description | FT MSL | | | | | | | | | | |
| 5 | |  | CLAY (FILL), light gray and tan mottled, moist, very stiff, plastic with few fine gravel and trace fine sand and rootlets. | 518.4 | | | | | | | | | |  |
| 10 | |  | FILL (WOOD WASTE), dark brown, dry with low decomposition and interbedded tan clay. | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | |
| 30 | | | | 495.9 | | | | | | | | | | |
| | | | CLAY (FILL), tan, moist, very stiff, plastic and homogenous. | 493.9 | | | | | | | | | | |
| 35 | | | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | | | |
| 45 | | | | | | | | | | | | | | |




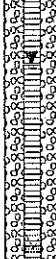



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FIGURE 14

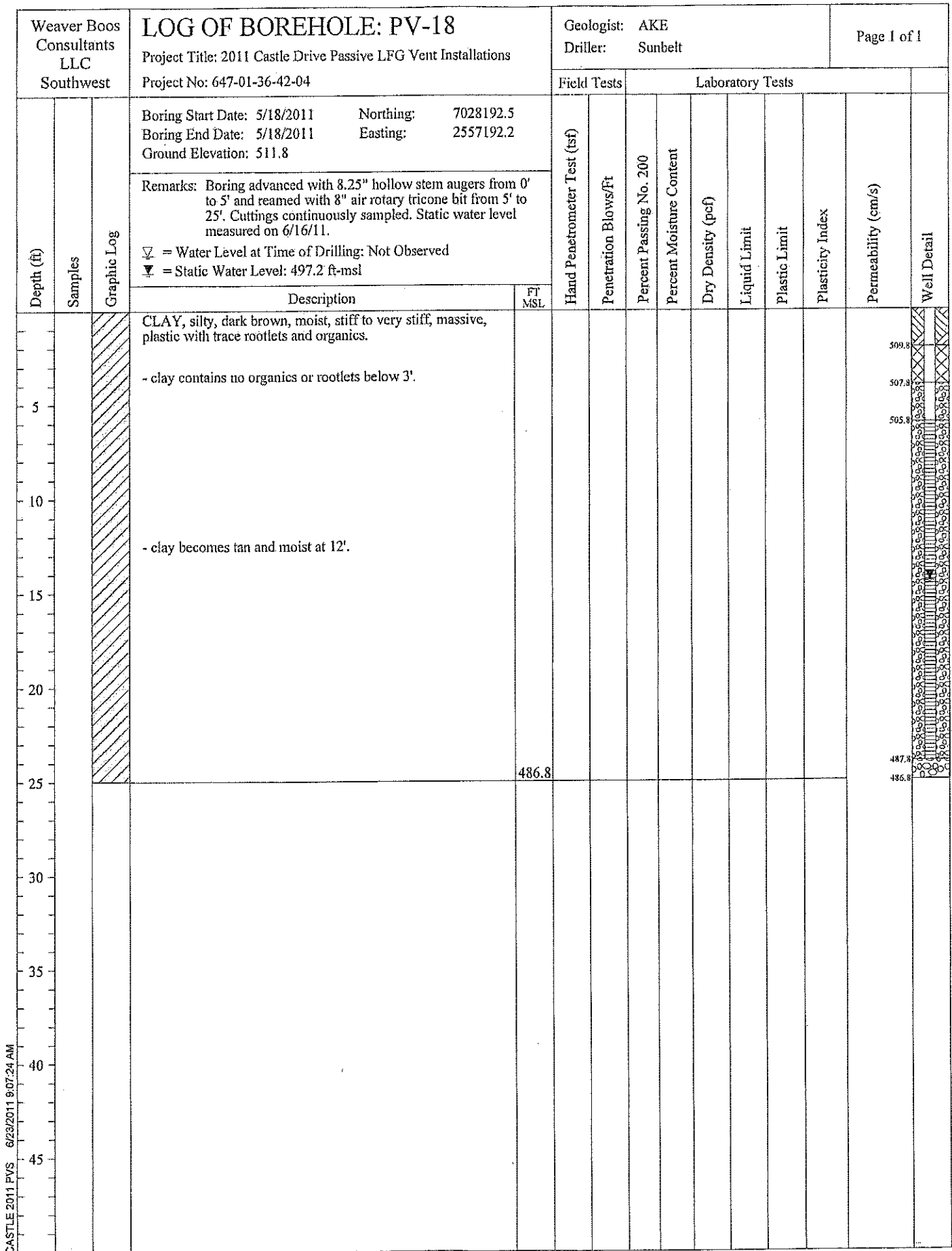
CASTLE 2011 PVS 6/23/2011 9:07:23 AM




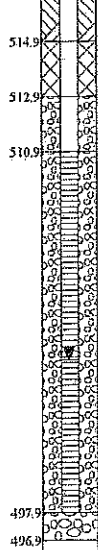
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| | | | | | | | | | | | | | | |
|--|---------|---|--|-----------|------------------------------|------------------------------------|-------------------------|--------------------------|-------------------|--------------|---------------|------------------|---------------------|---|
| Weaver Boos Consultants LLC Southwest | | | LOG OF BOREHOLE: PV-17 | | | Geologist: AKE Driller: Sunbelt | | | Page 1 of 1 | | | | | |
| | | | Project Title: 2011 Castle Drive Passive LFG Vent Installations | | | | | | | | | | | |
| | | | Project No: 647-01-36-42-04 | | | Field Tests | | | Laboratory Tests | | | | | |
| Depth (ft) | Samples | Graphic Log | Boring Start Date: 5/17/2011 Northing: 7027396.0 Boring End Date: 5/17/2011 Easting: 2556943.1 Ground Elevation: 522.2 | | Hand Penetrometer Test (tsf) | Penetration Blows/Ft | Percent Passing No. 200 | Percent Moisture Content | Dry Density (pcf) | Liquid Limit | Plastic Limit | Plasticity Index | Permeability (cm/s) | Well Detail |
| | | | Remarks: Boring advanced with 8.25" hollow stem augers from 0' to 23'. Borehole was continuously sampled with 5' CME split barrels. Static water level measured on 6/16/11. ▽ = Water Level at Time of Drilling: 503.2 ft-msl ▼ = Static Water Level: 509.8 ft-msl | | | | | | | | | | | |
| | | | Description | FT MSL | | | | | | | | | | |
| 5 | |  | CLAY (FILL), light gray and tan mottled, moist, very stiff, plastic with few fine gravel and trace fine sand and rootlets. | 512.2 | | | | | | | | | |  |
| 10 | |  | FILL (WOOD WASTE), black and dark brown, moist to wet with high decomposition and interbedded tan clay. | | | | | | | | | | |  |
| 15 | | | | | | | | | | | | | | |
| 20 | |  | - fill becomes wet at 19'. | 501.2 | | | | | | | | | |  |
| | | | CLAY (FILL), tan, wet, very stiff, plastic and homogenous. | 499.2 | | | | | | | | | |  |
| 25 | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | | | |
| 45 | | | | | | | | | | | | | | |

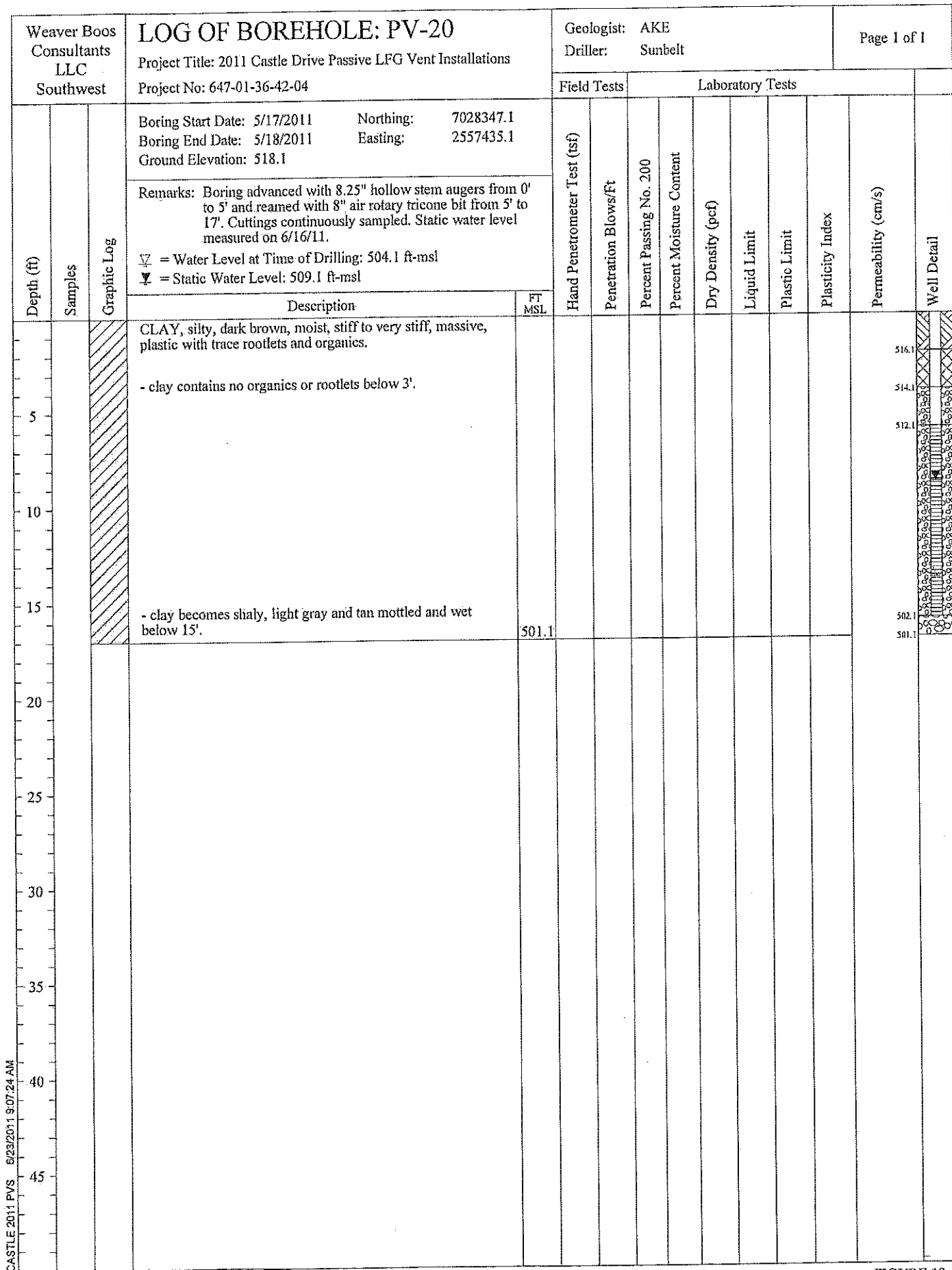
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CASTLE 2011 PVS 6/23/2011 9:07:24 AM

| Weaver Boos Consultants LLC Southwest | | | LOG OF BOREHOLE: PV-19 | | Geologist: AKE Driller: Sunbelt | | Page 1 of 1 | | | | | | | |
|--|---------|--|--|--|------------------------------------|----------------------|-------------------------|--------------------------|-------------------|--------------|---------------|------------------|---------------------|--|
| | | | Project Title: 2011 Castle Drive Passive LFG Vent Installations Project No: 647-01-36-42-04 | | Field Tests | | Laboratory Tests | | | | | | | |
| Depth (ft) | Samples | Graphic Log | Boring Start Date: 6/3/2011 Northing: 7028268.4 Boring End Date: 6/3/2011 Easting: 2557314.2 Ground Elevation: 516.9 | | Hand Penetrometer Test (tsf) | Penetration Blows/Ft | Percent Passing No. 200 | Percent Moisture Content | Dry Density (pcf) | Liquid Limit | Plastic Limit | Plasticity Index | Permeability (cm/s) | Well Detail |
| Remarks: Boring advanced with 8.25" hollow stem augers from 0' to 5' and reamed with 8" air rotary tricone bit from 5' to 20'. Cuttings continuously sampled. Static water level measured on 6/16/11. ▽ = Water Level at Time of Drilling: Not Observed ▼ = Static Water Level: 503.3 ft-msl | | Description | FT MSL | | | | | | | | | | | |
| 5 | |  | CLAY, silty, dark brown, moist, stiff to very stiff, massive, plastic with trace rootlets and organics. | | | | | | | | | | |  |
| 10 | | | - clay contains no organics or rootlets below 3'. | | | | | | | | | | | |
| 15 | | | - clay becomes tan and moist at 12'. | | | | | | | | | | | |
| 20 | | | | | 496.9 | | | | | | | | | |
| 25 | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | | | |
| 45 | | | | | | | | | | | | | | |

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ATTACHMENT H7
DRILLER'S PASSIVE VENT COMPLETION REPORTS

STATE OF TEXAS WELL REPORT for Tracking #257283

| | | | |
|----------------|--|-----------------|----------------|
| Owner: | City of Garland | Owner Well #: | PV-4 |
| Address: | 3637 Castle Drive Garland, TX 75040 | Grid #: | 33-04-4 |
| Well Location: | 3637 Castle Drive Garland, TX 75040 | Latitude: | 32° 55' 50" N |
| Well County: | Dallas | Longitude: | 096° 35' 00" W |
| Elevation: | No Data | GPS Brand Used: | Google Earth |

| | | | |
|---------------|----------|---------------|---------|
| Type of Work: | New Well | Proposed Use: | Monitor |
|---------------|----------|---------------|---------|

Drilling Date: Started: 5/24/2011
 Completed: 5/24/2011

Diameter of Hole: Diameter: 8.25 in From Surface To 48 ft

Drilling Method: Air Rotary

Borehole Gravel Packed From: (No Data) ft to (No Data) ft
 Completion: Gravel Pack Size:

Annular Seal Data: 1st Interval: From 0 ft to 2 ft with 1 concrete (#sacks and material)
 2nd Interval: From 2 ft to 4 ft with 1 Bentonite (#sacks and material)
 3rd Interval: From 4 ft to 48 ft with 12 Pea Gravel (#sacks and material)
 Method Used: Gravity
 Cemented By: Mark W. Hickox
 Distance to Septic Field or other Concentrated Contamination: No Data
 Distance to Property Line: No Data
 Method of Verification: No Data
 Approved by Variance: No Data

Surface Surface Sleeve Installed
 Completion:

Water Level: Static level: No Data
 Artesian flow: No Data

Packers: No Data

Plugging Info: Casing or Cement/Bentonite left in well: No Data

Type Of Pump: No Data

Well Tests: No Data

Water Quality: Type of Water: No Data
 Depth of Strata: No Data
 Chemical Analysis Made: No Data
 Did the driller knowingly penetrate any strata which contained undesirable constituents: No Data

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Sunbelt Industrial Services
 Information: 2415 Cullen St

Fort Worth , TX 76107

Driller License Number: 58780

Licensed Well Driller Signature: Mark W. Hickox

Registered Driller Apprentice Signature: No Data

Apprentice Registration Number: No Data

Comments: No Data

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking number (Tracking #257283) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0-48' Clay

CASING, BLANK PIPE & WELL SCREEN DATA

| Dia. | New/Used | Type | Setting From/To |
|------|----------|-----------|------------------|
| 4" | New | PVC Riser | 0-6' SCH 40 |
| 4" | New | Screen | 6-47' 0.010 Slot |

STATE OF TEXAS WELL REPORT for Tracking #257281

| | | | |
|----------------|--|-----------------|----------------|
| Owner: | City of Garland | Owner Well #: | PV-5 |
| Address: | 3637 Castle Drive Garland, TX 75040 | Grid #: | 33-04-4 |
| Well Location: | 3637 Castle Drive Garland, TX 75040 | Latitude: | 32° 55' 50" N |
| Well County: | Dallas | Longitude: | 096° 35' 00" W |
| Elevation: | No Data | GPS Brand Used: | Google Earth |

| | |
|-------------------------------|------------------------------|
| Type of Work: New Well | Proposed Use: Monitor |
|-------------------------------|------------------------------|

Drilling Date: Started: 5/24/2011
 Completed: 5/24/2011

Diameter of Hole: Diameter: 8.25 in From Surface To 45 ft

Drilling Method: Air Rotary

Borehole Gravel Packed From: (No Data) ft to (No Data) ft
 Completion: Gravel Pack Size:

Annular Seal Data: 1st Interval: From 0 ft to 2 ft with 1 concrete (#sacks and material)
 2nd Interval: From 2 ft to 4 ft with 1 Bentonite (#sacks and material)
 3rd Interval: From 4 ft to 45 ft with 12 Pea Gravel (#sacks and material)
 Method Used: Gravity
 Cemented By: Mark W. Hickox
 Distance to Septic Field or other Concentrated Contamination: No Data
 Distance to Property Line: No Data
 Method of Verification: No Data
 Approved by Variance: No Data

Surface Surface Sleeve Installed
 Completion:

Water Level: Static level: No Data
 Artesian flow: No Data

Packers: No Data

Plugging Info: Casing or Cement/Bentonite left in well: No Data

Type Of Pump: No Data

Well Tests: No Data

Water Quality: Type of Water: No Data
 Depth of Strata: No Data
 Chemical Analysis Made: No Data
 Did the driller knowingly penetrate any strata which contained undesirable constituents: No Data

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Sunbelt Industrial Services
 Information: 2415 Cullen St

Fort Worth , TX 76107

Driller License Number: 58780

Licensed Well Driller Signature: Mark W. Hickox

Registered Driller Apprentice Signature: No Data

Apprentice Registration Number: No Data

Comments: No Data

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0-45' Clay

CASING, BLANK PIPE & WELL SCREEN DATA

| Dia. | New/Used | Type | Setting From/To |
|------|----------|-----------|------------------|
| 4" | New | PVC Riser | 0-6' SCH 40 |
| 4" | New | Screen | 6-44' 0.010 Slot |

STATE OF TEXAS WELL REPORT for Tracking #257279

| | | | |
|----------------|--|-----------------|----------------|
| Owner: | City of Garland | Owner Well #: | PV-6 |
| Address: | 3637 Castle Drive Garland, TX 75040 | Grid #: | 33-04-4 |
| Well Location: | 3637 Castle Drive Garland, TX 75040 | Latitude: | 32° 55' 50" N |
| Well County: | Dallas | Longitude: | 096° 35' 00" W |
| Elevation: | No Data | GPS Brand Used: | Google Earth |

| | | | |
|---------------|----------|---------------|---------|
| Type of Work: | New Well | Proposed Use: | Monitor |
|---------------|----------|---------------|---------|

Drilling Date: Started: 5/23/2011
 Completed: 5/23/2011

Diameter of Hole: Diameter: 8.25 in From Surface To 46 ft

Drilling Method: Air Rotary

Borehole Gravel Packed From: (No Data) ft to (No Data) ft
 Completion: Gravel Pack Size:

Annular Seal Data: 1st Interval: From 0 ft to 2 ft with 1 concrete (#sacks and material)
 2nd Interval: From 2 ft to 4 ft with 1 Bentonite (#sacks and material)
 3rd Interval: From 4 ft to 46 ft with 12 Pea Gravel (#sacks and material)
 Method Used: Gravity
 Cemented By: Mark W. Hickox
 Distance to Septic Field or other Concentrated Contamination: No Data
 Distance to Property Line: No Data
 Method of Verification: No Data
 Approved by Variance: No Data

Surface Surface Sleeve Installed
 Completion:

Water Level: Static level: No Data
 Artesian flow: No Data

Packers: No Data

Plugging Info: Casing or Cement/Bentonite left in well: No Data

Type Of Pump: No Data

Well Tests: No Data

Water Quality: Type of Water: No Data
 Depth of Strata: No Data
 Chemical Analysis Made: No Data
 Did the driller knowingly penetrate any strata which contained undesirable constituents: No Data

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Sunbelt Industrial Services
 Information: 2415 Cullen St

Fort Worth , TX 76107

Driller License Number: 58780
Licensed Well Driller Signature: Mark W. Hickox
Registered Driller Apprentice Signature: No Data
Apprentice Registration Number: No Data
Comments: No Data

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0-46' Clay

CASING, BLANK PIPE & WELL SCREEN DATA

| Dia. | New/Used | Type | Setting From/To |
|------|----------|-----------|------------------|
| 4" | New | PVC Riser | 0-6' SCH 40 |
| 4" | New | Screen | 6-45' 0.010 Slot |

STATE OF TEXAS WELL REPORT for Tracking #257276

| | | | |
|----------------|--|-----------------|----------------|
| Owner: | City of Garland | Owner Well #: | PV-7 |
| Address: | 3637 Castle Drive Garland, TX 75040 | Grid #: | 33-04-4 |
| Well Location: | 3637 Castle Drive Garland, TX 75040 | Latitude: | 32° 55' 50" N |
| Well County: | Dallas | Longitude: | 096° 35' 00" W |
| Elevation: | No Data | GPS Brand Used: | Google Earth |

| | | | |
|---------------|----------|---------------|---------|
| Type of Work: | New Well | Proposed Use: | Monitor |
|---------------|----------|---------------|---------|

Drilling Date: Started: 5/20/2011
 Completed: 5/20/2011

Diameter of Hole: Diameter: 8.25 in From Surface To 43 ft

Drilling Method: Air Rotary

Borehole Gravel Packed From: (No Data) ft to (No Data) ft
 Completion: Gravel Pack Size:

Annular Seal Data: 1st Interval: From 0 ft to 2 ft with 1 concrete (#sacks and material)
 2nd Interval: From 2 ft to 4 ft with 1 Bentonite (#sacks and material)
 3rd Interval: From 4 ft to 43 ft with 12 Pea Gravel (#sacks and material)
 Method Used: Gravity
 Cemented By: Mark W. Hickox
 Distance to Septic Field or other Concentrated Contamination: No Data
 Distance to Property Line: No Data
 Method of Verification: No Data
 Approved by Variance: No Data

Surface Surface Sleeve Installed
 Completion:

Water Level: Static level: No Data
 Artesian flow: No Data

Packers: No Data

Plugging Info: Casing or Cement/Bentonite left in well: No Data

Type Of Pump: No Data

Well Tests: No Data

Water Quality: Type of Water: No Data
 Depth of Strata: No Data
 Chemical Analysis Made: No Data
 Did the driller knowingly penetrate any strata which contained undesirable constituents: No Data

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Sunbelt Industrial Services
 Information: 2415 Cullen St

Fort Worth, TX 76107

Driller License Number: 58780

Licensed Well Driller Signature: Mark W. Hickox

Registered Driller Apprentice Signature: No Data

Apprentice Registration Number: No Data

Comments: No Data

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0-43' clay

CASING, BLANK PIPE & WELL SCREEN DATA

| Dia. | New/Used | Type | Setting From/To |
|------|----------|-----------|------------------|
| 4" | New | PVC Riser | 0-6' SCH 40 |
| 4" | New | Screen | 6-42' 0.010 Slot |

STATE OF TEXAS WELL REPORT for Tracking #257275

| | | | |
|----------------|--|-----------------|----------------|
| Owner: | City of Garland | Owner Well #: | PV-8 |
| Address: | 3637 Castle Drive Garland, TX 75040 | Grid #: | 33-04-4 |
| Well Location: | 3637 Castle Drive Garland, TX 75040 | Latitude: | 32° 55' 50" N |
| Well County: | Dallas | Longitude: | 096° 35' 00" W |
| Elevation: | No Data | GPS Brand Used: | Google Earth |

| | | | |
|---------------|----------|---------------|---------|
| Type of Work: | New Well | Proposed Use: | Monitor |
|---------------|----------|---------------|---------|

Drilling Date: Started: 5/20/2011
 Completed: 5/20/2011

Diameter of Hole: Diameter: 8.25 in From Surface To 43 ft

Drilling Method: Air Rotary

Borehole Gravel Packed From: (No Data) ft to (No Data) ft
 Completion: Gravel Pack Size:

Annular Seal Data: 1st Interval: From 0 ft to 2 ft with 1 concrete (#sacks and material)
 2nd Interval: From 2 ft to 4 ft with 1 Bentonite (#sacks and material)
 3rd Interval: From 4 ft to 43 ft with 12 Pea Gravel (#sacks and material)
 Method Used: Gravity
 Cemented By: Mark W. Hickox
 Distance to Septic Field or other Concentrated Contamination: No Data
 Distance to Property Line: No Data
 Method of Verification: No Data
 Approved by Variance: No Data

Surface Surface Sleeve Installed
 Completion:

Water Level: Static level: No Data
 Artesian flow: No Data

Packers: No Data

Plugging Info: Casing or Cement/Bentonite left in well: No Data

Type Of Pump: No Data

Well Tests: No Data

Water Quality: Type of Water: No Data
 Depth of Strata: No Data
 Chemical Analysis Made: No Data
 Did the driller knowingly penetrate any strata which contained undesirable constituents: No Data

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Sunbelt Industrial Services
 Information: 2415 Cullen St

Fort Worth , TX 76107

Driller License Number: 58780

Licensed Well Driller Signature: Mark W. Hickox

Registered Driller Apprentice Signature: No Data

Apprentice Registration Number: No Data

Comments: No Data

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0-43' Clay

CASING, BLANK PIPE & WELL SCREEN DATA

| Dia. | New/Used | Type | Setting From/To |
|------|----------|-----------|------------------|
| 4" | New | PVC Riser | 0-6' SCH 40 |
| 4" | New | Screen | 6-42' 0.010 Slot |

STATE OF TEXAS WELL REPORT for Tracking #257288

| | | | |
|------------------------|--|-----------------------|----------------|
| Owner: | City of Garland | Owner Well #: | PV-9 |
| Address: | 3637 Castle Drive Garland, TX 75040 | Grid #: | 33-04-4 |
| Well Location: | 3637 Castle Drive Garland, TX 75040 | Latitude: | 32° 55' 50" N |
| Well County: | Dallas | Longitude: | 096° 35' 00" W |
| Elevation: | No Data | GPS Brand Used: | Google Earth |
| Type of Work: New Well | | Proposed Use: Monitor | |

Drilling Date: Started: 6/3/2011
Completed: 6/3/2011

Diameter of Hole: Diameter: 8.25 in From Surface To 40 ft

Drilling Method: Air Rotary

Borehole Completion: Gravel Packed From: (No Data) ft to (No Data) ft
Gravel Pack Size:

Annular Seal Data: 1st Interval: From 0 ft to 2 ft with 1 concrete (#sacks and material)
2nd Interval: From 2 ft to 4 ft with 1 Bentonite (#sacks and material)
3rd Interval: From 4 ft to 40 ft with 12 Pea Gravel (#sacks and material)
Method Used: Gravity
Cemented By: Mark W. Hickox
Distance to Septic Field or other Concentrated Contamination: No Data
Distance to Property Line: No Data
Method of Verification: No Data
Approved by Variance: No Data

Surface Completion: Surface Sleeve Installed

Water Level: Static level: No Data
Artesian flow: No Data

Packers: No Data

Plugging Info: Casing or Cement/Bentonite left in well: No Data

Type Of Pump: No Data

Well Tests: No Data

Water Quality: Type of Water: No Data
Depth of Strata: No Data
Chemical Analysis Made: No Data
Did the driller knowingly penetrate any strata which contained undesirable constituents: No Data

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Information: Sunbelt Industrial Services
2415 Cullen St

Fort Worth, TX 76107

Driller License Number: 58780

Licensed Well Driller Signature: Mark W. Hickox

Registered Driller Apprentice Signature: No Data

Apprentice Registration Number: No Data

Comments: No Data

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0-40' Clay

CASING, BLANK PIPE & WELL SCREEN DATA

| Dia. | New/Used | Type | Setting From/To |
|------|----------|-----------|------------------|
| 4" | New | PVC Riser | 0-6' SCH 40 |
| 4" | New | Screen | 6-39' 0.010 Slot |

STATE OF TEXAS WELL REPORT for Tracking #257286

| | | | |
|----------------|--|-----------------|----------------|
| Owner: | City of Garland | Owner Well #: | PV-10 |
| Address: | 3637 Castle Drive Garland, TX 75040 | Grid #: | 33-04-4 |
| Well Location: | 3637 Castle Drive Garland, TX 75040 | Latitude: | 32° 55' 50" N |
| Well County: | Dallas | Longitude: | 096° 35' 00" W |
| Elevation: | No Data | GPS Brand Used: | Google Earth |

| | | | |
|---------------|----------|---------------|---------|
| Type of Work: | New Well | Proposed Use: | Monitor |
|---------------|----------|---------------|---------|

Drilling Date: Started: 5/31/2011
Completed: 5/31/2011

Diameter of Hole: Diameter: 8.25 in From Surface To 41 ft

Drilling Method: Air Rotary

Borehole Completion: Gravel Packed From: (No Data) ft to (No Data) ft
Gravel Pack Size:

Annular Seal Data: 1st Interval: From 0 ft to 2 ft with 1 concrete (#sacks and material)
2nd Interval: From 2 ft to 4 ft with 1 Bentonite (#sacks and material)
3rd Interval: From 4 ft to 41 ft with 12 Pea Gravel (#sacks and material)
Method Used: Gravity
Cemented By: Mark W. Hickox
Distance to Septic Field or other Concentrated Contamination: No Data
Distance to Property Line: No Data
Method of Verification: No Data
Approved by Variance: No Data

Surface Completion: Surface Sleeve Installed

Water Level: Static level: No Data
Artesian flow: No Data

Packers: No Data

Plugging Info: Casing or Cement/Bentonite left in well: No Data

Type Of Pump: No Data

Well Tests: No Data

Water Quality: Type of Water: No Data
Depth of Strata: No Data
Chemical Analysis Made: No Data
Did the driller knowingly penetrate any strata which contained undesirable constituents: No Data

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Information: Sunbelt Industrial Services
2415 Cullen St

Fort Worth , TX 76107

Driller License Number: 58780

Licensed Well Driller Signature: Mark W. Hickox

Registered Driller Apprentice Signature: No Data

Apprentice Registration Number: No Data

Comments: No Data

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0-41' Clay

CASING, BLANK PIPE & WELL SCREEN DATA

| Dia. | New/Used | Type | Setting From/To |
|------|----------|-----------|------------------|
| 4" | New | PVC Riser | 0-6' SCH 40 |
| 4" | New | Screen | 6-40' 0.010 Slot |

STATE OF TEXAS WELL REPORT for Tracking #257287

| | | | |
|----------------|--|-----------------|----------------|
| Owner: | City of Garland | Owner Well #: | PV-11 |
| Address: | 3637 Castle Drive Garland, TX 75040 | Grid #: | 33-04-4 |
| Well Location: | 3637 Castle Drive Garland, TX 75040 | Latitude: | 32° 55' 50" N |
| Well County: | Dallas | Longitude: | 096° 35' 00" W |
| Elevation: | No Data | GPS Brand Used: | Google Earth |
| Type of Work: | New Well | Proposed Use: | Monitor |

Drilling Date: Started: 5/31/2011
Completed: 5/31/2011

Diameter of Hole: Diameter: 8.25 in From Surface To 41 ft

Drilling Method: Air Rotary

Borehole Completion: Gravel Packed From: (No Data) ft to (No Data) ft
Gravel Pack Size:

Annular Seal Data: 1st Interval: From 0 ft to 2 ft with 1 concrete (#sacks and material)
2nd Interval: From 2 ft to 4 ft with 1 Bentonite (#sacks and material)
3rd Interval: From 4 ft to 41 ft with 12 Pea Gravel (#sacks and material)
Method Used: Gravity
Cemented By: Mark W. Hickox
Distance to Septic Field or other Concentrated Contamination: No Data
Distance to Property Line: No Data
Method of Verification: No Data
Approved by Variance: No Data

Surface Completion: Surface Sleeve Installed

Water Level: Static level: No Data
Artesian flow: No Data

Packers: No Data

Plugging Info: Casing or Cement/Bentonite left in well: No Data

Type Of Pump: No Data

Well Tests: No Data

Water Quality: Type of Water: No Data
Depth of Strata: No Data
Chemical Analysis Made: No Data
Did the driller knowingly penetrate any strata which contained undesirable constituents: No Data

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Information: Sunbelt Industrial Services
2415 Cullen St

Fort Worth , TX 76107

Driller License
Number: 58780Licensed Well
Driller Signature: Mark W. HickoxRegistered Driller
Apprentice
Signature: No DataApprentice
Registration
Number: No Data

Comments: Amended 6/30/11 Ref.# 9240

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0-41' Clay

CASING, BLANK PIPE & WELL SCREEN DATA

| Dia. | New/Used | Type | Setting From/To |
|------|----------|-----------|------------------|
| 4" | New | PVC Riser | 0-6' SCH 40 |
| 4" | New | Screen | 6-40' 0.010 Slot |

STATE OF TEXAS WELL REPORT for Tracking #257273

| | | | |
|----------------|---|-----------------|----------------|
| Owner: | City of Garland | Owner Well #: | PV-12 |
| Address: | 3637 Castle Drive Garland , TX 75040 | Grid #: | 33-04-4 |
| Well Location: | 3637 Castle Drive Garland , TX 75040 | Latitude: | 32° 55' 50" N |
| Well County: | Dallas | Longitude: | 096° 35' 00" W |
| Elevation: | No Data | GPS Brand Used: | Google Earth |

| | | | |
|---------------|----------|---------------|---------|
| Type of Work: | New Well | Proposed Use: | Monitor |
|---------------|----------|---------------|---------|

Drilling Date: Started: 5/18/2011
 Completed: 5/19/2011

Diameter of Hole: Diameter: 8.25 in From Surface To 41 ft

Drilling Method: Air Rotary

Borehole Gravel Packed From: (No Data) ft to (No Data) ft
 Completion: Gravel Pack Size:

Annular Seal Data: 1st Interval: From 0 ft to 2 ft with 1 concrete (#sacks and material)
 2nd Interval: From 2 ft to 4 ft with 1 Bentonite (#sacks and material)
 3rd Interval: From 4 ft to 41 ft with 6 Pea Gravel (#sacks and material)
 Method Used: Gravity
 Cemented By: Mark W. Hickox
 Distance to Septic Field or other Concentrated Contamination: No Data
 Distance to Property Line: No Data
 Method of Verification: No Data
 Approved by Variance: No Data

Surface Surface Sleeve Installed
 Completion:

Water Level: Static level: No Data
 Artesian flow: No Data

Packers: No Data

Plugging Info: Casing or Cement/Bentonite left in well: No Data

Type Of Pump: No Data

Well Tests: No Data

Water Quality: Type of Water: No Data
 Depth of Strata: No Data
 Chemical Analysis Made: No Data
 Did the driller knowingly penetrate any strata which contained undesirable constituents: No Data

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Sunbelt Industrial Services
 Information: 2415 Cullen St

Fort Worth , TX 76107

Driller License Number: 58780

Licensed Well Driller Signature: Mark W. Hickox

Registered Driller Apprentice Signature: No Data

Apprentice Registration Number: No Data

Comments: No Data

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0-41' Clay

CASING, BLANK PIPE & WELL SCREEN DATA

| Dia. | New/Used | Type | Setting From/To |
|------|----------|-----------|------------------|
| 4" | New | PVC Riser | 0-6' SCH 40 |
| 4" | New | Screen | 6-40' 0.010 Slot |

STATE OF TEXAS WELL REPORT for Tracking #257284

| | | | |
|----------------|--|-----------------|----------------|
| Owner: | City of Garland | Owner Well #: | PV-13 |
| Address: | 3637 Castle Drive Garland, TX 75040 | Grid #: | 33-04-4 |
| Well Location: | 3637 Castle Drive Garland, TX 75040 | Latitude: | 32° 55' 50" N |
| Well County: | Dallas | Longitude: | 096° 35' 00" W |
| Elevation: | No Data | GPS Brand Used: | Google Earth |

| | |
|-------------------------------|------------------------------|
| Type of Work: New Well | Proposed Use: Monitor |
|-------------------------------|------------------------------|

Drilling Date: Started: 5/24/2011
 Completed: 5/24/2011

Diameter of Hole: Diameter: 8.25 in From Surface To 41 ft

Drilling Method: Air Rotary

Borehole Gravel Packed From: (No Data) ft to (No Data) ft
 Completion: Gravel Pack Size:

Annular Seal Data: 1st Interval: From 0 ft to 2 ft with 1 concrete (#sacks and material)
 2nd Interval: From 2 ft to 4 ft with 1 Bentonite (#sacks and material)
 3rd Interval: From 4 ft to 41 ft with 12 Pea Gravel (#sacks and material)
 Method Used: Gravity
 Cemented By: Mark W. Hickox
 Distance to Septic Field or other Concentrated Contamination: No Data
 Distance to Property Line: No Data
 Method of Verification: No Data
 Approved by Variance: No Data

Surface Surface Sleeve Installed
 Completion:

Water Level: Static level: No Data
 Artesian flow: No Data

Packers: No Data

Plugging Info: Casing or Cement/Bentonite left in well: No Data

Type Of Pump: No Data

Well Tests: No Data

Water Quality: Type of Water: No Data
 Depth of Strata: No Data
 Chemical Analysis Made: No Data
 Did the driller knowingly penetrate any strata which contained undesirable constituents: No Data

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Sunbelt Industrial Services
 Information: 2415 Cullen St

| | |
|--|------------------------------|
| | Fort Worth , TX 76107 |
| Driller License Number: | 58780 |
| Licensed Well Driller Signature: | Mark W. Hickox |
| Registered Driller Apprentice Signature: | No Data |
| Apprentice Registration Number: | No Data |
| Comments: | No Data |

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking number (Tracking #257284) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

| From (ft) To (ft) | Description |
|-------------------|-------------|
| 0-41' | Clay |

CASING, BLANK PIPE & WELL SCREEN DATA

| Dia. | New/Used | Type | Setting From/To |
|------|----------|-----------|------------------|
| 4" | New | PVC Riser | 0-6' SCH 40 |
| 4" | New | Screen | 6-40' 0.010 Slot |

STATE OF TEXAS WELL REPORT for Tracking #257274

| | | | |
|----------------|--|-----------------|----------------|
| Owner: | City of Garland | Owner Well #: | PV-14 |
| Address: | 3637 Castle Drive Garland, TX 75040 | Grid #: | 33-04-4 |
| Well Location: | 3637 Castle Drive Garland, TX 75040 | Latitude: | 32° 55' 50" N |
| Well County: | Dallas | Longitude: | 096° 35' 00" W |
| Elevation: | No Data | GPS Brand Used: | Google Earth |

| | | | |
|---------------|----------|---------------|---------|
| Type of Work: | New Well | Proposed Use: | Monitor |
|---------------|----------|---------------|---------|

Drilling Date: Started: 5/19/2011
 Completed: 5/19/2011

Diameter of Hole: Diameter: 8.25 in From Surface To 41 ft

Drilling Method: Air Rotary

Borehole Gravel Packed From: (No Data) ft to (No Data) ft
 Completion: Gravel Pack Size:

Annular Seal Data: 1st Interval: From 0 ft to 2 ft with 1 concrete (#sacks and material)
 2nd Interval: From 2 ft to 4 ft with 1 Bentonite (#sacks and material)
 3rd Interval: From 4 ft to 41 ft with 6 Pea Gravel (#sacks and material)
 Method Used: Gravity
 Cemented By: Mark W. Hickox
 Distance to Septic Field or other Concentrated Contamination: No Data
 Distance to Property Line: No Data
 Method of Verification: No Data
 Approved by Variance: No Data

Surface Surface Sleeve Installed
 Completion:

Water Level: Static level: No Data
 Artesian flow: No Data

Packers: No Data

Plugging Info: Casing or Cement/Bentonite left in well: No Data

Type Of Pump: No Data

Well Tests: No Data

Water Quality: Type of Water: No Data
 Depth of Strata: No Data
 Chemical Analysis Made: No Data
 Did the driller knowingly penetrate any strata which contained undesirable constituents: No Data

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Sunbelt Industrial Services
 Information: 2415 Cullen St

Fort Worth , TX 76107

Driller License Number: 58780

Licensed Well Driller Signature: Mark W. Hickox

Registered Driller Apprentice Signature: No Data

Apprentice Registration Number: No Data

Comments: No Data

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking number (Tracking #257274) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0-41' Clay

CASING, BLANK PIPE & WELL SCREEN DATA

| Dia. | New/Used | Type | Setting From/To |
|------|----------|-----------|------------------|
| 4" | New | PVC Riser | 0-6' SCH 40 |
| 4" | New | Screen | 6-40' 0.010 Slot |

STATE OF TEXAS WELL REPORT for Tracking #257264

| | | | |
|----------------|--|-----------------|----------------|
| Owner: | City of Garland | Owner Well #: | PV-15 |
| Address: | 3637 Castle Drive Garland, TX 75040 | Grid #: | 33-04-4 |
| Well Location: | 3637 Castle Drive Garland, TX 75040 | Latitude: | 32° 55' 50" N |
| Well County: | Dallas | Longitude: | 096° 35' 00" W |
| Elevation: | No Data | GPS Brand Used: | Google Earth |

| | | | |
|---------------|----------|---------------|---------|
| Type of Work: | New Well | Proposed Use: | Monitor |
|---------------|----------|---------------|---------|

Drilling Date: Started: 5/16/2011
 Completed: 5/16/2011

Diameter of Hole: Diameter: 8.25 in From Surface To 32 ft

Drilling Method: Hollow Stem Auger

Borehole Gravel Packed From: (No Data) ft to (No Data) ft
 Completion: Gravel Pack Size:

Annular Seal Data: 1st Interval: From 0 ft to 4 ft with 2 concrete (#sacks and material)
 2nd Interval: From 4 ft to 32 ft with 8 Pea Gravel (#sacks and material)
 3rd Interval: No Data
 Method Used: Gravity
 Cemented By: Mark W. Hickox
 Distance to Septic Field or other Concentrated Contamination: No Data
 Distance to Property Line: No Data
 Method of Verification: No Data
 Approved by Variance: No Data

Surface No Data
 Completion:

Water Level: Static level: No Data
 Artesian flow: No Data

Packers: No Data

Plugging Info: Casing or Cement/Bentonite left in well: No Data

Type Of Pump: No Data

Well Tests: No Data

Water Quality: Type of Water: No Data
 Depth of Strata: No Data
 Chemical Analysis Made: No Data
 Did the driller knowingly penetrate any strata which contained undesirable constituents: No Data

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Sunbelt Industrial Services
 Information: 2415 Cullen St

Fort Worth , TX 76107

Driller License Number: 58780

Licensed Well Driller Signature: Mark W. Hickox

Registered Driller Apprentice Signature: No Data

Apprentice Registration Number: No Data

Comments: No Data

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking number (Tracking #257264) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0-7' Clay
7-30' Trash
30-32' Clay

CASING, BLANK PIPE & WELL SCREEN DATA

| Dia. | New/Used | Type | Setting From/To |
|------|----------|-----------|------------------|
| 4" | New | PVC Riser | 0-7' SCH 40 |
| 4" | New | Screen | 7-31' 0.010 Slot |

STATE OF TEXAS WELL REPORT for Tracking #257266

| | | | |
|----------------|--|-----------------|----------------|
| Owner: | City of Garland | Owner Well #: | PV-16 |
| Address: | 3637 Castle Drive Garland, TX 75040 | Grid #: | 33-04-4 |
| Well Location: | 3637 Castle Drive Garland, TX 75040 | Latitude: | 32° 55' 50" N |
| Well County: | Dallas | Longitude: | 096° 35' 00" W |
| Elevation: | No Data | GPS Brand Used: | Google Earth |

| | | | |
|---------------|----------|---------------|---------|
| Type of Work: | New Well | Proposed Use: | Monitor |
|---------------|----------|---------------|---------|

Drilling Date: Started: 5/16/2011
Completed: 5/16/2011

Diameter of Hole: Diameter: 8.25 in From Surface To 25 ft

Drilling Method: Hollow Stem Auger

Borehole Completion: Gravel Packed From: (No Data) ft to (No Data) ft
Gravel Pack Size:

Annular Seal Data: 1st Interval: From 0 ft to (No Data) ft with 2 concrete (#sacks and material)
2nd Interval: From 4 ft to 25 ft with 6 Pea Gravel (#sacks and material)
3rd Interval: No Data
Method Used: Gravity
Cemented By: Mark W. Hickox
Distance to Septic Field or other Concentrated Contamination: No Data
Distance to Property Line: No Data
Method of Verification: No Data
Approved by Variance: No Data

Surface Completion: No Data

Water Level: Static level: No Data
Artesian flow: No Data

Packers: No Data

Plugging Info: Casing or Cement/Bentonite left in well: No Data

Type Of Pump: No Data

Well Tests: No Data

Water Quality: Type of Water: No Data
Depth of Strata: No Data
Chemical Analysis Made: No Data
Did the driller knowingly penetrate any strata which contained undesirable constituents: No Data

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Information: Sunbelt Industrial Services
2415 Cullen St

Fort Worth, TX 76107

Driller License Number: 58780

Licensed Well Driller Signature: Mark W. Hickox

Registered Driller Apprentice Signature: No Data

Apprentice Registration Number: No Data

Comments: No Data

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking number (Tracking #257266) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

| From (ft) | To (ft) | Description |
|-----------|---------|-------------|
| 0-9' | | Clay |
| 9-23' | | Trash |
| 23-25' | | Clay |

CASING, BLANK PIPE & WELL SCREEN DATA

| Dia. | New/Used | Type | Setting From/To |
|------|----------|-----------|------------------|
| 4" | New | PVC Riser | 0-7' SCH 40 |
| 4" | New | Screen | 7-24' 0.010 Slot |

STATE OF TEXAS WELL REPORT for Tracking #257268

| | |
|---|-------------------------------------|
| Owner: City of Garland | Owner Well #: PV-17 |
| Address: 3637 Castle Drive Garland, TX 75040 | Grid #: 33-04-4 |
| Well Location: 3637 Castle Drive Garland, TX 75040 | Latitude: 32° 55' 50" N |
| Well County: Dallas | Longitude: 096° 35' 00" W |
| Elevation: No Data | GPS Brand Used: Google Earth |

| | |
|-------------------------------|------------------------------|
| Type of Work: New Well | Proposed Use: Monitor |
|-------------------------------|------------------------------|

Drilling Date: **Started: 5/17/2011
Completed: 5/17/2011**

Diameter of Hole: **Diameter: 8.25 in From Surface To 23 ft**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Gravel Packed From: (No Data) ft to (No Data) ft
Gravel Pack Size:**

Annular Seal Data: **1st Interval: From 0 ft to 4 ft with 2 concrete (#sacks and material)
2nd Interval: From 4 ft to 23 ft with 6 Pea Gravel (#sacks and material)
3rd Interval: No Data
Method Used: Gravity
Cemented By: Mark W. Hickox
Distance to Septic Field or other Concentrated Contamination: No Data
Distance to Property Line: No Data
Method of Verification: No Data
Approved by Variance: No Data**

Surface Completion: **No Data**

Water Level: **Static level: No Data
Artesian flow: No Data**

Packers: **No Data**

Plugging Info: **Casing or Cement/Bentonite left in well: No Data**

Type Of Pump: **No Data**

Well Tests: **No Data**

Water Quality: **Type of Water: No Data
Depth of Strata: No Data
Chemical Analysis Made: No Data
Did the driller knowingly penetrate any strata which contained undesirable constituents: No Data**

Certification Data: **The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.**

Company Information: **Sunbelt Industrial Services
2415 Cullen St**

Fort Worth , TX 76107

Driller License Number: 58780

Licensed Well Driller Signature: Mark W. Hickox

Registered Driller Apprentice Signature: No Data

Apprentice Registration Number: No Data

Comments: No Data

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking number (Tracking #257268) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

| From (ft) | To (ft) | Description |
|-----------|---------|-------------|
| 0-10' | | Clay |
| 10-21' | | Trash |
| 21-23' | | Clay |

CASING, BLANK PIPE & WELL SCREEN DATA

| Dia. | New/Used | Type | Setting From/To |
|------|----------|-----------|------------------|
| 4" | New | PVC Riser | 0-7' SCH 40 |
| 4" | New | Screen | 7-22' 0.010 Slot |

STATE OF TEXAS WELL REPORT for Tracking #257290

| | | | |
|----------------|--|-----------------|----------------|
| Owner: | City of Garland | Owner Well #: | PV-18 |
| Address: | 3637 Castle Drive Garland, TX 75040 | Grid #: | 33-04-4 |
| Well Location: | 3637 Castle Drive Garland, TX 75040 | Latitude: | 32° 55' 50" N |
| Well County: | Dallas | Longitude: | 096° 35' 00" W |
| Elevation: | No Data | GPS Brand Used: | Google Earth |

| | | | |
|---------------|----------|---------------|---------|
| Type of Work: | New Well | Proposed Use: | Monitor |
|---------------|----------|---------------|---------|

Drilling Date: Started: 5/18/2011
 Completed: 5/18/2011

Diameter of Hole: Diameter: 8.25 in From Surface To 25 ft

Drilling Method: Air Rotary

Borehole Gravel Packed From: (No Data) ft to (No Data) ft
 Completion: Gravel Pack Size:

Annular Seal Data: 1st Interval: From 0 ft to 2 ft with 1 concrete (#sacks and material)
 2nd Interval: From 2 ft to 4 ft with 1 Bentonite (#sacks and material)
 3rd Interval: From 4 ft to 25 ft with 10 Pea Gravel (#sacks and material)
 Method Used: Gravity
 Cemented By: Mark W. Hickox
 Distance to Septic Field or other Concentrated Contamination: No Data
 Distance to Property Line: No Data
 Method of Verification: No Data
 Approved by Variance: No Data

Surface Surface Sleeve Installed
 Completion:

Water Level: Static level: No Data
 Artesian flow: No Data

Packers: No Data

Plugging Info: Casing or Cement/Bentonite left in well: No Data

Type Of Pump: No Data

Well Tests: No Data

Water Quality: Type of Water: No Data
 Depth of Strata: No Data
 Chemical Analysis Made: No Data
 Did the driller knowingly penetrate any strata which contained undesirable constituents: No Data

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Sunbelt Industrial Services
 Information: 2415 Cullen St

Fort Worth , TX 76107

Driller License Number: 58780

Licensed Well Driller Signature: Mark W. Hickox

Registered Driller Apprentice Signature: No Data

Apprentice Registration Number: No Data

Comments: No Data

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking number (Tracking #257290) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0-25' Clay

CASING, BLANK PIPE & WELL SCREEN DATA

| Dia. | New/Used | Type | Setting From/To |
|------|----------|-----------|------------------|
| 4" | New | PVC Riser | 0-6' SCH 40 |
| 4" | New | Screen | 6-24' 0.010 Slot |

STATE OF TEXAS WELL REPORT for Tracking #257270

| | | | |
|----------------|--|-----------------|----------------|
| Owner: | City of Garland | Owner Well #: | PV-19 |
| Address: | 3637 Castle Drive Garland, TX 75040 | Grid #: | 33-04-4 |
| Well Location: | 3637 Castle Drive Garland, TX 75040 | Latitude: | 32° 55' 50" N |
| Well County: | Dallas | Longitude: | 096° 35' 00" W |
| Elevation: | No Data | GPS Brand Used: | Google Earth |

| | | | |
|---------------|----------|---------------|---------|
| Type of Work: | New Well | Proposed Use: | Monitor |
|---------------|----------|---------------|---------|

Drilling Date: Started: 6/3/2011
 Completed: 6/3/2011

Diameter of Hole: Diameter: 8.25 in From Surface To 20 ft

Drilling Method: Air Rotary

Borehole Completion: Gravel Packed From: (No Data) ft to (No Data) ft
 Gravel Pack Size:

Annular Seal Data: 1st Interval: From 0 ft to 2 ft with 1 concrete (#sacks and material)
 2nd Interval: From 2 ft to 4 ft with 1 Bentonite (#sacks and material)
 3rd Interval: From 4 ft to 20 ft with 6 Pea Gravel (#sacks and material)
 Method Used: Gravity
 Cemented By: Mark W. Hickox
 Distance to Septic Field or other Concentrated Contamination: No Data
 Distance to Property Line: No Data
 Method of Verification: No Data
 Approved by Variance: No Data

Surface Completion: Surface Sleeve Installed

Water Level: Static level: No Data
 Artesian flow: No Data

Packers: No Data

Plugging Info: Casing or Cement/Bentonite left in well: No Data

Type Of Pump: No Data

Well Tests: No Data

Water Quality: Type of Water: No Data
 Depth of Strata: No Data
 Chemical Analysis Made: No Data
 Did the driller knowingly penetrate any strata which contained undesirable constituents: No Data

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Information: Sunbelt Industrial Services
 2415 Cullen St

Fort Worth , TX 76107

Driller License Number: 58780

Licensed Well Driller Signature: Mark W. Hickox

Registered Driller Apprentice Signature: No Data

Apprentice Registration Number: No Data

Comments: No Data

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking number (Tracking #257270) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0-20' Clay

CASING, BLANK PIPE & WELL SCREEN DATA

| Dia. | New/Used | Type | Setting From/To |
|------|----------|-----------|------------------|
| 4" | New | PVC Riser | 0-6' SCH 40 |
| 4" | New | Screen | 6-19' 0.010 Slot |

STATE OF TEXAS WELL REPORT for Tracking #257272

| | | | |
|------------------------|--|-----------------------|----------------|
| Owner: | City of Garland | Owner Well #: | PV-20 |
| Address: | 3637 Castle Drive Garland, TX 75040 | Grid #: | 33-04-4 |
| Well Location: | 3637 Castle Drive Garland, TX 75040 | Latitude: | 32° 55' 50" N |
| Well County: | Dallas | Longitude: | 096° 35' 00" W |
| Elevation: | No Data | GPS Brand Used: | Google Earth |
| Type of Work: New Well | | Proposed Use: Monitor | |

Drilling Date: Started: 5/17/2011
Completed: 5/18/2011

Diameter of Hole: Diameter: 8.25 in From Surface To 17 ft

Drilling Method: Air Rotary

Borehole Completion: Gravel Packed From: (No Data) ft to (No Data) ft
Gravel Pack Size:

Annular Seal Data: 1st Interval: From 0 ft to 2 ft with 1 concrete (#sacks and material)
2nd Interval: From 2 ft to 4 ft with 1 Bentonite (#sacks and material)
3rd Interval: From 4 ft to 17 ft with 6 Pea Gravel (#sacks and material)
Method Used: Gravity
Cemented By: Mark W. Hickox
Distance to Septic Field or other Concentrated Contamination: No Data
Distance to Property Line: No Data
Method of Verification: No Data
Approved by Variance: No Data

Surface Completion: Surface Sleeve Installed

Water Level: Static level: No Data
Artesian flow: No Data

Packers: No Data

Plugging Info: Casing or Cement/Bentonite left in well: No Data

Type Of Pump: No Data

Well Tests: No Data

Water Quality: Type of Water: No Data
Depth of Strata: No Data
Chemical Analysis Made: No Data
Did the driller knowingly penetrate any strata which contained undesirable constituents: No Data

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Information: Sunbelt Industrial Services
2415 Cullen St

Fort Worth , TX 76107

Driller License
Number: 58780Licensed Well
Driller Signature: Mark W. HickoxRegistered Driller
Apprentice
Signature: No DataApprentice
Registration
Number: No Data

Comments: Amended 6/30/11 Ref.# 9241

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking number (Tracking #257272) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0-17' Clay

CASING, BLANK PIPE & WELL SCREEN DATA

| Dia. | New/Used | Type | Setting From/To |
|------|----------|-----------|------------------|
| 4" | New | PVC Riser | 0-6' SCH 40 |
| 4" | New | Screen | 6-16' 0.010 Slot |

ATTACHMENT 2

PART I FORM



Texas Commission on Environmental Quality

Permit or Registration Application for Municipal Solid Waste Facility

Part I

A. General Information

| | | | | |
|--|-----------------------|--------|----|-------|
| Facility Name: | Castle Drive Landfill | | | |
| Physical or Street Address (if available): | 3637 Castle Dr. | | | |
| (City) (County) (State) (Zip Code): | Garland | Dallas | TX | 75089 |
| (Area Code) Telephone Number: | (972) 205-3424 | | | |
| Charter Number: | | | | |

If the application is submitted on behalf of a corporation, provide the Charter Number as recorded with the Office of the Secretary of State for Texas.

| | | | | |
|-------------------------------------|-----------------|--------|----|-------|
| Operator Name ¹ : | City of Garland | | | |
| Mailing Address: | P.O. Box 469002 | | | |
| (City) (County) (State) (Zip Code): | Garland | Dallas | TX | 75046 |
| (Area Code) Telephone Number: | (972) 205-3424 | | | |
| (Area Code) FAX Number: | (972) 205-3434 | | | |
| Charter Number: | | | | |

If the permittee is the same as the operator, type "Same as Operator".

| | | | | |
|--|------------------|--|--|--|
| Permittee Name: | Same as Operator | | | |
| Physical or Street Address (if available): | | | | |
| (City) (County) (State) (Zip Code): | | | | |
| (Area Code) Telephone Number: | | | | |
| Charter Number: | | | | |

If the application is submitted by a corporation or by a person residing out of state, the applicant must register an Agent in Service or Agent of Service with the Texas Secretary of State's office and provide a complete mailing address for the agent. The agent must be a Texas resident.

| | | | | |
|-------------------------------------|-----------------|--------|----|-------|
| Agent Name: | Lonnie R. Banks | | | |
| Mailing Address: | P.O. Box 469002 | | | |
| (City) (County) (State) (Zip Code): | Garland | Dallas | TX | 75046 |
| (Area Code) Telephone Number: | (972) 205-3675 | | | |
| (Area Code) FAX Number: | (972) 205-3434 | | | |

Application Type:

| | | | | | |
|-------------------------------------|--------------|-------------------------------------|---------------------|-------------------------------------|-------------------------------|
| <input checked="" type="checkbox"/> | Permit | <input type="checkbox"/> | Major Amendment | <input type="checkbox"/> | Minor Amendment |
| <input type="checkbox"/> | Registration | <input checked="" type="checkbox"/> | Modification | <input type="checkbox"/> | Temporary Authorization |
| | | <input checked="" type="checkbox"/> | w/Public Notice | | |
| | | <input type="checkbox"/> | w/out Public Notice | <input checked="" type="checkbox"/> | Notice of Deficiency Response |

¹ The operator has the duty to submit an application if the facility is owned by one person and operated by another [30 TAC 305.43(b)]. The permit will specify the operator and the owner who is listed on this application [Section 361.087 Texas Health and Safety Code].

Facility Classification:

| | | | |
|--|-------------------------------------|----------------------------------|----------------------------------|
| <input checked="" type="checkbox"/> Type I | <input type="checkbox"/> Type IV | <input type="checkbox"/> Type V | <input type="checkbox"/> Type IX |
| <input type="checkbox"/> Type I AE | <input type="checkbox"/> Type IV AE | <input type="checkbox"/> Type VI | |

Activities covered by this application (check all that apply):

| | | |
|----------------------------------|-------------------------------------|--|
| <input type="checkbox"/> Storage | <input type="checkbox"/> Processing | <input checked="" type="checkbox"/> Disposal |
|----------------------------------|-------------------------------------|--|

Waste management units covered by this application (check all that apply):

| | | | |
|--|-------------------------------------|---|---|
| <input type="checkbox"/> Containers | <input type="checkbox"/> Tanks | <input type="checkbox"/> Surface Impoundments | <input checked="" type="checkbox"/> Landfills |
| <input type="checkbox"/> Incinerators | <input type="checkbox"/> Composting | <input type="checkbox"/> Type IV Demonstration Unit | <input type="checkbox"/> Type IX Energy/Material Recovery |
| <input type="checkbox"/> Other (Specify) | | <input type="checkbox"/> Other (Specify) | |
| <input type="checkbox"/> Other (Specify) | | <input type="checkbox"/> Other (Specify) | |

Is this submittal part of a Consolidated Permit Processing request, in accordance with 30 TAC Chapter 33?

☐ Yes ☒ No

If yes, state the other TCEQ program authorizations requested.

Provide a brief description of the portion of the facility covered by this application. For amendments, modifications, and temporary authorizations, provide a brief description of the exact changes to the permit or registration conditions and supporting documents referenced by the permit or registration. Also, provide an explanation of why the amendment, modification, or temporary authorization is requested.

The purpose of this permit modification is to modify the site's existing Attachment 14 - Landfill Gas Management Plan (LGMP) to incorporate the installation of the passive vents into the site's LGMP.

Does the application contain confidential Material? ☐ Yes ☒ No

If yes, cross-reference the confidential material *throughout the application* and submit as a separate document or binder conspicuously marked "CONFIDENTIAL."

Alternative Language Notice Instructions (Not Applicable)

For certain permit applications, public notice in an alternate language is required. If an elementary school or middle school nearest to the facility offers a bilingual program, notice may be required to be published in an alternative language. The Texas Education Code, upon which the TCEQ alternative language notice requirements are based, trigger a bilingual education program to apply to an entire school district should the requisite alternative language speaking student population exist. However, there may not exist any bilingual students at a particular school within a district which is required to offer the bilingual education program. For this reason, the requirement to publish notice in an alternative language is triggered if the nearest elementary or middle school, as a part of a larger school district, is required to make a bilingual education program available to qualifying students and either the school has students enrolled at such a program on-site, or has students who attend such a program at another location in satisfaction of the school's obligation to provide such a program as a member of a triggered district.

If it is determined that an alternative language notice is required, the applicant is responsible for ensuring that the publication in the alternate language is complete and accurate in that language. Electronic versions of the Spanish template examples are available from the TCEQ to help the applicant complete the publication in the alternative language.

Alternative Language Notice Application Form:

Alternative language notice confirmation for this application:

1. Is a bilingual program required by the Texas Education Code in the school district where the facility is located? ☐ YES ☐ NO

(If NO, alternative language notice publication not required)

2. If YES to question 1, are students enrolled in a bilingual education program at either the elementary school or the middle school nearest to the facility? ☐ YES ☐ NO

(If YES to questions 1 and 2, alternative language publication is required; If NO to question 2, then consider the next question)

3. If YES to question 1, are there students enrolled at either the elementary school or the middle school nearest to the facility who attend a bilingual education program at another location? ☐ YES ☐ NO

(If Yes to questions 1 and 3, alternative language publication is required; If NO to question 3, then consider the next question)

4. If YES to question 1, would either the elementary school or the middle school nearest to the facility be required to provide a bilingual education program but for the fact that it secured a waiver from this requirement, as available under 19 TAC '89.1205(g)?
☐ YES ☐ NO

(If Yes to questions 1 and 4, alternative language publication is required; If NO to question 4, alternative language notice publication not required)

If a bilingual education program(s) is provided by either the elementary school or the middle school nearest to the facility, which language(s) is required by the bilingual program?

Note: Applicants for new permits and major amendments must make a copy of the administratively complete application available at a public place in the county where the facility is, or will be, located for review and copying by the public.

| | | | |
|--|--|--|--|
| Public place where administratively complete permit application will be located. | | | |
| Public Place (e.g., public library, county court house, city hall, etc.): | | | |
| Mailing Address: | | | |
| (City) (County) (State) (Zip Code): | | | |
| (Area Code) Telephone Number: | | | |

B. Facility Location

Except for Type I AE and Type IV AE landfill facilities, for permits, registrations, amendments, and modifications requiring public notice, provide the URL address of a publicly accessible internet web site where the application and all revisions to that application will be posted.

<http://www.ci.garland.tx.us/Home/Departments/Utility+Services/Environmental+Waste+Services/>

| | |
|--|--|
| Local Government Jurisdiction: | |
| Within City Limits of: | |
| Within Extraterritorial Jurisdiction of City of: | |
| Is the proposed municipal or industrial solid waste disposal or processing facility located in an area in which the governing body of the municipality or county has prohibited the disposal or processing of municipal or industrial solid waste? (If YES, provide a copy of the ordinance or order): | |
| <input type="checkbox"/> YES <input type="checkbox"/> NO | |

Provide a description of the location of the facility with respect to known or easily identifiable landmarks.

Not Applicable

Detail the access routes from the nearest United States or state highway to the facility.

Not Applicable

Provide the latitudinal and longitudinal geographic coordinates of the facility.

| | |
|-----------------------|---|
| Latitude | N |
| Longitude | W |
| Elevation (above msl) | |

Is the facility within the Coastal Management Program boundary? ☐ Yes ☒ No

Texas Department of Transportation District Location:

| | | | |
|-------------------------------------|----------------|--|--|
| TXDOT District Name & Number: | Not Applicable | | |
| District Engineer's Name: | | | |
| Street or P. O. Box: | | | |
| (City) (County) (State) (Zip Code): | | | |
| (Area Code) Telephone Number: | | | |
| (Area Code) FAX Number: | | | |

The local governmental authority or agency responsible for road maintenance:

| | | | |
|-------------------------------------|----------------|--|--|
| Agency Name | Not Applicable | | |
| Contact Person's Name: | | | |
| Street or P. O. Box: | | | |
| (City) (County) (State) (Zip Code): | | | |
| (Area Code) Telephone Number: | | | |
| (Area Code) FAX Number: | | | |

State Representative:

| | | | |
|-------------------------------------|----------------|--|--|
| District Number: | Not Applicable | | |
| State Representative's Name: | | | |
| District Office Address: | | | |
| (City) (County) (State) (Zip Code): | | | |
| (Area Code) Telephone Number: | | | |
| (Area Code) FAX Number: | | | |

State Senator:

| | | | |
|-------------------------------------|----------------|--|--|
| District Number: | Not Applicable | | |
| State Senator's Name: | | | |
| District Office Address: | | | |
| (City) (County)(State)(Zip Code): | | | |
| (Area Code) Telephone Number: | | | |
| (Area Code) FAX Number: | | | |

Council of Government (COG) Information:

| | | | |
|-------------------------------------|----------------|--|--|
| COG Name: | Not Applicable | | |
| COG Representative's Name: | | | |
| COG Representative's Title: | | | |
| Street or P. O. Box: | | | |
| (City) (County)(State)(Zip Code): | | | |
| (Area Code) Telephone Number: | | | |
| (Area Code) FAX Number: | | | |

River Basin Information:

| | | | |
|-------------------------------------|----------------|--|--|
| River Authority: | Not Applicable | | |
| Contact Person's Name: | | | |
| Watershed Sub-Basin Name: | | | |
| Street or P. O. Box: | | | |
| (City) (County)(State)(Zip Code): | | | |
| (Area Code) Telephone Number: | | | |
| (Area Code) FAX Number: | | | |

| | | | |
|---|--|--|------------------------------------|
| This site is located in the following District of the U.S. Army Corps of Engineers: | | | |
| <input type="checkbox"/> Albuquerque, NM | <input type="checkbox"/> Ft. Worth, TX | <input type="checkbox"/> Galveston, TX | <input type="checkbox"/> Tulsa, OK |

C. Maps

General

For permits, registrations, and amendments only, submit a topographic map, ownership map, county highway map, or a map prepared by a registered professional engineer or a registered surveyor which shows the facility and each of its intake and discharge structures and any other structure or location regarding the regulated facility and associated activities. Maps must be of material suitable for a permanent record, and shall be on sheets 8-1/2 inches by 14 inches or folded to that size, and shall be on a scale of not less than one inch equals one mile. The map shall depict the approximate boundaries of the tract of land owned or to be used by the applicant and shall extend at least one mile beyond the tract boundaries sufficient to show the following:

each well, spring, and surface water body or other water in the state within the map area;

the general character of the areas adjacent to the facility, including public roads, towns and the nature of development of adjacent lands such as residential, commercial, agricultural, recreational, undeveloped, etc;

the location of any waste disposal activities conducted on the tract not included in the application; and

the ownership of tracts of land adjacent to the facility and within a reasonable distance from the proposed point or points of discharge, deposit, injection, or other place of disposal or activity.

General location maps

For permits, registrations, and amendments only, submit at least one general location map at a scale of one-half inch equals one mile. This map shall be all or a portion of a county map prepared by Texas Department of Transportation (TxDOT). If TxDOT publishes more detailed maps of the proposed facility area, the more detailed maps shall also be included in Part I. Use the latest revision of all maps.

Land ownership map

Provide a map that locates the property owned by adjacent and potentially affected landowners. The maps should show all property ownership within 1/4 mile of the facility, on-site facility easement holders, and all mineral interest ownership under the facility.

Landowners list

Provide the adjacent and potentially affected landowners' list, keyed to the land ownership map with each property owner's name and mailing address. The list shall include all property owners within 1/4 mile of the facility, easement holders, and all mineral interest ownership under the facility. Provide the property, easement holders', and mineral interest owners' names and mailing addresses derived from the real property appraisal records as listed on the date that the application is filed. Provide the list in electronic form, as well.

D. Property owner information (Not Applicable)

For permits, registrations, amendments, and modifications that change the legal description, a change in owner, or a change in operator only, provide the following:

(1) the legal description of the facility;

- (A) the abstract number as maintained by the Texas General Land Office for the surveyed tract of land;
- (B) the legal description of the property and the county, book, and page number or other generally accepted identifying reference of the current ownership record;
- (C) for property that is platted, the county, book, and page number or other generally accepted identifying reference of the final plat record that includes the acreage encompassed in the application and a copy of the final plat, in addition to a written legal description;
- (D) a boundary metes and bounds description of the facility signed and sealed by a registered professional land surveyor;
- (E) on-site easements at the facility, and
- (F) drawings of the boundary metes and bounds description; and

(2) a property owner affidavit signed by the owner.

E. Legal authority (Not Applicable)

Provide verification of the legal status of the owner and operator, such as a one-page certificate of incorporation issued by the secretary of state. List all persons having over a 20% ownership in the proposed facility.

| | | | | | | | | | |
|--|---------|--------------------------|-------------|--------------------------|-----------------|--------------------------|----------------|--------------------------|-------------------------|
| Indicate Ownership status of the facility: | | | | | | | | | |
| <input type="checkbox"/> | Private | <input type="checkbox"/> | Corporation | <input type="checkbox"/> | Partnership | <input type="checkbox"/> | Proprietorship | <input type="checkbox"/> | Non-Profit Organization |
| <input type="checkbox"/> | Public | <input type="checkbox"/> | Federal | <input type="checkbox"/> | Military | <input type="checkbox"/> | State | <input type="checkbox"/> | Regional |
| <input type="checkbox"/> | County | <input type="checkbox"/> | Municipal | <input type="checkbox"/> | Other (Specify) | | | | |

| | | |
|---|------------------------------|-----------------------------|
| Does the operator own the facility units and the facility property? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|---|------------------------------|-----------------------------|

If "No," for permits, registrations, amendments, and modifications that changes the legal description, a change in owner, or a change in operators submit a copy of the lease for the use of or the option to buy the facility units or facility property, as appropriate, and identify:

| | | | |
|---------------------------------------|--|--|--|
| Owner Name: | | | |
| Street or P. O. Box: | | | |
| (City) (County) (State) (Zip Code): | | | |
| (Area Code) Telephone Number: | | | |
| (Area Code) FAX Number: | | | |
| Charter Number: | | | |

F. Evidence of competency (Not Applicable)

For permits, registrations, amendments, and modifications that change the legal description, a change in owner, or a change in operators submit a list of all Texas solid waste sites that the owner and operator have owned or operated within the last ten years.

| Site Name | Site Type | Permit/Reg. No. | County | Dates of Operation |
|-----------|-----------|-----------------|--------|--------------------|
| | | | | |

Submit a list of all solid waste sites in all states, territories, or countries in which the owner and operator have a direct financial interest.

| Site Name | Location | Dates of Operation | Regulatory Agency (Name & Address) |
|-----------|----------|--------------------|------------------------------------|
| | | | |

A licensed solid waste facility supervisor, as defined in 30 TAC Chapter 30, Occupational Licenses and Registrations will be employed before commencing facility operation.

Provide the names of the principals and supervisors of the owner's and operator's organization, together with previous affiliations with other organizations engaged in solid waste activities.

| Name | Previous Affiliation | Other Organization |
|------|----------------------|--------------------|
| | | |

For landfill permit applications only, evidence of competency to operate the facility shall also include landfilling and earthmoving experience if applicable, and other pertinent experience, or licenses as described in 30 TAC Chapter 30 possessed by key personnel. The number and size of each type of equipment to be dedicated to facility operation will be specified in greater detail on Part IV of the application within the site operating plan.

| Landfilling/Earthmoving Equipment Types | Personnel Experience or Licenses |
|---|----------------------------------|
| | |
| | |
| | |

For mobile liquid waste processing units, submit a list of all solid waste, liquid waste, or mobile waste units that the owner and operator have owned or operated within the past five years. Submit a list of any final enforcement orders, court judgments, consent decrees, and criminal convictions of this state and the federal government within the last five years relating to compliance with applicable legal requirements relating to the handling of solid or liquid waste under the jurisdiction of the commission or the United States Environmental Protection Agency. Applicable legal requirement means an environmental law, regulation, permit, order, consent decree, or other requirement.

| | |
|--|--|
| Solid waste, liquid waste, or mobile waste units owned or operated within past 5 years | Texas and federal final enforcement orders, court judgments, consent decrees, and criminal convictions |
| | |
| | |
| | |

G. Appointments (Not Applicable)

Provide documentation that the person signing the application meets the requirements of 30 TAC §305.44, Signatories to Applications. If the authority has been delegated, provide a copy of the document issued by the governing body of the owner or operator authorizing the person that signed the application to act as agent for the owner or operator.

H. Application Fees

For a new permit, registration, amendment, modification, or temporary authorization, submit a \$150 application fee.

For authorization to construct an enclosed structure over an old, closed municipal solid waste landfill in accordance with 30 TAC 330 Subchapter T, submit a \$2,500 application fee.

If paying by check, send payment to:

Texas Commission on Environmental Quality
Financial Administration Division, MC 214
P. O. Box 13087
Austin, Texas 78711-3087

| | |
|--|----------------|
| Payment maybe made online using TCEQ e-pay at www.tceq.state.tx.us/e-services/ | |
| E-pay confirmation number | 582EA000101140 |

PROPERTY OWNER AFFIDAVIT

"I, _____,
(property owner)

acknowledge that the State of Texas may hold me either jointly or severally responsible for the operation, maintenance, and closure and post-closure care of the facility. For a facility where waste will remain after closure, I acknowledge that I have a responsibility to file with the county deed records an affidavit to the public advising that the land will be used for a solid waste facility prior to the time that the facility actually begins operating as a municipal solid waste landfill facility, and to file a final recording upon completion of disposal operations and closure of the landfill units in accordance with Title 30 Texas Administrative Code §330.19, Deed Recordation. I further acknowledge that I or the operator and the State of Texas shall have access to the property during the active life and post-closure care period, if required, after closure for the purpose of inspection and maintenance."

(Owner signature)

(Date)

Signature Page

I, Lonnie R. Banks
(Operator)

Managing Director, Environmental Waste Services
(Title)

certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Lonnie R. Banks

Date: 10-18-11

TO BE COMPLETED BY THE OPERATOR IF THE APPLICATION IS SIGNED BY AN AUTHORIZED REPRESENTATIVE FOR THE OPERATOR

I, _____, hereby designate _____
(Print or Type Operator Name) (Print or Type Representative Name)

as my representative and hereby authorize said representative to sign any application, submit additional information as may be requested by the Commission; and/or appear for me at any hearing or before the Texas Commission on Environmental Quality in conjunction with this request for a Texas Water Code or Texas Solid Waste Disposal Act permit. I further understand that I am responsible for the contents of this application, for oral statements given by my authorized representative in support of the application, and for compliance with the terms and conditions of any permit which might be issued based upon this application.

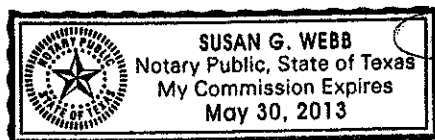
Printed or Typed Name of Operator or Principal Executive Officer

Signature

SUBSCRIBED AND SWORN to before me by the said _____

On this 18th day of October, 2011

My commission expires on the 30th day of May, 2013



Susan G. Webb
Notary Public in and for
Dallas County, Texas

(Note: Application Must Bear Signature & Seal of Notary Public)

ATTACHMENT 3

**ATTACHMENT 14 REVISION PAGES
(REDLINE/STRIKEOUT FORMAT)**

**CITY OF GARLAND CASTLE DRIVE LANDFILL
DALLAS COUNTY, TEXAS
MSW PERMIT NO. 1062A**

PERMIT MODIFICATION

**ATTACHMENT 14
LANDFILL GAS MANAGEMENT PLAN**

Prepared for

City of Garland

April 1994

Revised April 1998

Revised May 2002

Revised January 2010

Revised October 2011

Prepared by

Weaver Boos Consultants, LLC-Southwest

TBPE Registration No. F-3727

6420 Southwest Boulevard, Suite 206

Fort Worth, Texas 76109

817-735-9770

Project No. 0647-01-11-25-06

| | | |
|------------|---|--------------|
| 5.0 | CONTINGENCY PLAN | 14-19 |
| 5.1 | Contingency Plan Guidelines | 14-19 |
| 5.2 | On-Site Structures Monitoring | 14-21 |
| 5.2.1 | Immediate Action | 14-21 |
| 5.2.2 | Action Within 7-days | 14-21 |
| 5.2.3 | Action Within 60-days | 14-21 |
| | 5.2.3.1 Prepare a Remediation Plan | 14-21 |
| | 5.2.3.2 Implementation of the Plan | 14-22 |
| 5.3 | Property Boundary Monitoring | 14-22 |
| 5.3.1 | Immediate Action | 14-22 |
| 5.3.2 | Action Within 7-days | 14-22 |
| 5.3.3 | Action Within 60-days | 14-23 |
| | 5.3.3.1 Prepare a Remediation Plan | 14-23 |
| | 5.3.3.2 Implementation of the Plan | 14-23 |
| 5.4 | Underground Utility Trench Vent Monitoring | 14-23 |
| 5.4.1 | Immediate Action | 14-23 |
| 5.4.2 | Action Within 7-days | 14-24 |
| 5.4.3 | Action Within 60-days | 14-24 |
| | 5.4.3.1 Prepare a Remediation Plan | 14-24 |
| | 5.4.3.2 Implementation of the Plan | 14-24 |
| 5.5 | Remediation Plan Status/Monitoring | 14-24 |
| 6.0 | LFG CONTROL SYSTEM INSTALLATION AND MONITORING | 14-25 |
| 6.1 | Passive Gas Control System | 14-25 |
| 6.1.1 | Monitoring | 14-26 |
| 6.2 | Active Gas Control System | 14-26 |
| 6.2.1 | Gas Collection System | 14-26 |
| 6.2.2 | Gas Utilization/Control System | 14-27 |
| 7.0 | SAFETY | 14-28 |

APPENDIX A

January 1994 Subsurface Methane Gas Survey Results

APPENDIX B

Perimeter Gas Probe Monitoring Field Data Form

APPENDIX C

Perimeter Gas Probe Details

APPENDIX D

Example Boring Log

APPENDIX E

Example Perimeter Gas Probe Construction

APPENDIX F

Sierra Monitor Instruction Manual

APPENDIX G

Portable Gas Indicator Instruction Manual

APPENDIX H

Passive Gas Vent Details and Locations [Added Attachments H4 through H7)

APPENDIX I

Perimeter Probe Design Depths

APPENDIX J

First Quarter Monitor Probe Report

5.4.2 Action Within 7-days

The Facility Manager/Site Supervisor will prepare a brief report to include:

- Results of any additional monitoring.
- Summary of actions taken included in 5.3.1 above.

5.4.3 Action Within 60-days

5.4.3.1 Prepare a Remediation Plan

A remediation plan will be prepared to include the following:

- Nature and extent of the problem.
- Proposed permanent (or a long term) remedial action(s) such as installation of passive and/or active gas control system.
- Copy of the plan will be provided to the concerned officials for records.

5.4.3.2 Implementation of the plan

Necessary steps will be taken and the proposed plan will be implemented. The officials involved will be notified.

5.5 Remediation Plan Status/Monitoring

Once a remediation plan has been implemented in an effort to mitigate the methane levels at a probe(s), the site will begin a 6-month evaluation period to determine the effectiveness of the remediation efforts. During this 6-month evaluation period the site, the probe(s) will be monitored monthly and the monthly results will be submitted quarterly to the TCEQ. Following this 6-month evaluation period an evaluation report will be submitted to the TCEQ. Should the monitoring data indicate that methane levels in the probe(s) is trending down or is below the regulatory limit, monthly monitoring. If however, after the 6-month evaluation period the probe(s) continues to have elevated methane readings with no significant change in the methane concentration, a new remediation plan will be submitted to the TCEQ detailing additional remediation efforts.

A probe will be considered remediated and will return to quarterly monitoring once the probe(s) has been below the regulatory limit for six consecutive monthly readings. The TCEQ will be notified when a probe has been remediated and is returning to quarterly monitoring.

6.0 LFG CONTROL SYSTEM INSTALLATION AND MONITORING

The objective of the active gas control system installation is to prevent the migration of landfill gas.

The results of Landfill Gas Monitoring, described in Section 4.0, will be presented to TCEQ for review. If a LFG control system is required at the landfill to control/prevent off-site gas migration, the City of Garland will pursue one of two alternatives.

- Passive Gas Control System
- Active Gas Control System

An active gas system is currently in place for the landfill due to potential beneficial use of the landfill gas. However, the City may adopt a passive gas control system in the future if changes in the economics of an active system, applicable regulations, and/or site conditions occur.

6.1 Passive Gas Control System

Passive vents can release some of the pressure of landfill gas within the waste and soil, thus reducing the amount of localized gas migration. The passive system is relatively economical to design, install and operate. Typical passive gas control system consist of gas “vents”. The vents are simple in design and require low maintenance. The design of a typical passive gas control vent is shown in **Appendix H**.

The proposed passive gas control system at the City of Garland Castle Drive Landfill will consist of gas vents installed in the refuse or in the existing ground outside the limits of waste. The passive vents will initially free vent into the atmosphere, thereby reducing subsurface pressure and control local lateral migration. The design and the spacing of the vent wells will be such that in the future, if necessary, the system could be converted into an “Active Gas Control system”.

The locations of the passive vents will be determined using any one of the following three methods:

A. Surface monitoring and observations:

Observations of the surface conditions at the site can aid in determining the best location(s) for passive vents. Venting cracks, stressed vegetation, and odors are all indicative of gas migration through the soil cover. In addition, monitoring of the surface may be conducted to locate less visible emission sources.

Three passive gas vents have been installed south of landfill gas permanent probe PP-9 in August 2009 to reduce the potential for off-site landfill gas migration. Attachment H2 and H3 depict the location of the three passive vents.

[2011 Installation] The 2011 installation, as shown in Attachment H4, includes the installation of seventeen passive vents in the vicinity of PP-6 and conversion of the three existing vents near PP-9 to active soil vapor extraction wells.

ATTACHMENT H6
PASSIVE VENT LITHOLOGIC LOGS

ATTACHMENT H7

DRILLER'S PASSIVE VENT COMPLETION REPORTS